

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of: Ignon et al.
U.S. Patent No.: 11,865,287 Attorney Docket No.: 58484-0001IP1
Issue Date: January 9, 2024
Appl. Serial No.: 18/094,884
Filing Date: January 9, 2023
Title: DEVICES AND METHODS FOR TREATING SKIN

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**PETITION FOR *INTER PARTES* REVIEW OF UNITED STATES PATENT
NO. 11,865,287 PURSUANT TO 35 U.S.C. §§ 311–319, 37 C.F.R. § 42**

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EXHIBITS

- EUNSUNG-1001 U.S. Pat. No. 11,865,287 to Ignon (“the ’287 patent”)
- EUNSUNG-1002 Excerpts from the Prosecution History of the ’287 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): 297-3

(“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. 9,550,052 (“the ’052 patent”)

EUNSUNG-1018 U.S. Patent No. 11,446,477 (“the ’477 patent”)

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”)

LISTING OF CLAIMS

Claim 1	
[1.pre]	A system for treating skin, the system comprising:
[1.1]	a console configured to receive a first container and at least one additional container;
[1.2]	a handpiece configured to contact skin tissue of a subject; and
[1.3]	a block in the console, wherein the block is: configured to selectively receive fluid from the first container when the first container is connected to the console; configured to selectively receive fluid from the at least one additional container when the at least one additional container is connected to the console; and, configured to selectively be in fluid communication with the handpiece through a first conduit when the handpiece is connected to the console;
[1.4]	a vacuum source, wherein the console comprises the vacuum source; and
[1.5]	wherein the handpiece is configured to be in fluid communication with the vacuum source through a second conduit when the handpiece is connected to the console;
[1.6]	wherein when the handpiece, the first container, the at least one additional container and a waste container are each connected to the console, the first container contains a first treatment fluid, and the at least one additional container contains an additional treatment fluid,
[1.7]	the handpiece is in fluid communication with the vacuum source and the waste container through the second conduit; and
[1.8]	the system is configured to deliver the first treatment fluid contained in the first container and the additional treatment fluid contained in the at least one additional container to the handpiece sequentially.

Claim 2	
[2]	The system of claim 1, wherein the at least one additional container comprises a second container and a third container such that the console is configured to receive at least three containers.
Claim 3	
[3]	The system of claim 2, wherein when the handpiece is connected to the console and the first container, the second container and the third container each contains fluid and is connected to the console, the system is configured to deliver to the handpiece one at a time fluid contained in the first container, fluid contained in the second container, and fluid contained in the third container.
Claim 4	
[4]	The system of claim 1, further comprising a computing device configured to control at least one function of the system.
Claim 5	
[5]	The system of claim 4, further comprising a user input device to select a flow of fluids from the first container and the at least one additional container to the handpiece.
Claim 6	
[6]	The system of claim 5, wherein the user input device comprises a touch screen.
Claim 7	
[7]	The system of claim 6, further comprising a display.
Claim 8	
[8]	The system of claim 1, wherein the block is configured to control a flow of the first treatment fluid contained in the first container and the additional treatment fluid contained in the at least one additional container into the block with a valve when the first container and the at least one additional container are connected to the console.

Claim 9	
[9]	The system of claim 1, wherein the system is configured to control a flow of the first treatment fluid contained in the first container to the handpiece through the block when each of the first container and the handpiece is connected to the console.
Claim 10	
[10]	The system of claim 9, wherein the system is configured to separately control a flow of a second treatment fluid contained in the at least one additional container to the handpiece through the block when each of the first container, the at least one additional container, and the handpiece are connected to the console.
Claim 11	
[11.pre]	A skin treatment apparatus comprising:
[11.1]	a console that includes a fluid control member that is configured to be in fluid communication with at least a first container and a second container when the first container and the second container are connected to the fluid control member;
[11.2]	a handpiece assembly configured to contact a skin surface of a subject;
[11.3]	a waste conduit configured to be in fluid communication with the handpiece assembly and a vacuum source to move waste away from the handpiece assembly when the waste conduit and the handpiece assembly are each connected to the console; and
[11.4]	wherein when each of the first container and the second container are connected to the console, the fluid control member is configured to be in fluid communication with each of the first container and the second container;
[11.5]	wherein when the handpiece assembly is connected to the console, the fluid control member is configured to be in fluid communication with the handpiece assembly;
[11.6]	wherein when (i) each of the first container and the second container contains treatment material, (ii) the first container and the second

	container are connected to the console, and (iii) the handpiece assembly is connected to the console, the skin treatment apparatus is configured to selectively draw treatment material from the first container or the second container to the handpiece assembly using, at least in part, a vacuum created along a distal end of the handpiece assembly by the vacuum source.
Claim 12	
[12]	The skin treatment apparatus of claim 11, wherein treatment material from the first container and the second container are configured to be drawn to the handpiece assembly sequentially.
Claim 14	
[14]	The skin treatment apparatus of claim 11, wherein the console comprises the vacuum source.
Claim 15	
[15]	The skin treatment apparatus of claim 11, wherein the skin treatment apparatus is configured to deliver a single treatment material from the first container to a patient's skin.
Claim 16	
[16]	The skin treatment apparatus of claim 11, wherein the treatment material in the first container is a skin treatment fluid.
Claim 17	
[17]	The skin treatment apparatus of claim 11, further comprising a computing device configured to control at least one function of the skin treatment apparatus.
Claim 18	
[18]	The skin treatment apparatus of claim 17, further comprising a user input device to facilitate control of a flow of treatment materials from at least one of the first container and the second container to the handpiece assembly.

Claim 19	
[19]	The skin treatment apparatus of claim 18, wherein the user input device comprises a touch screen.
Claim 20	
[20]	The skin treatment apparatus of claim 19, further comprising a display.
Claim 22	
[22.pre]	A system for treating skin, the system comprising:
[22.1]	a console configured to receive a first container and at least one additional container;
[22.2]	a collection lumen configured to be in fluid communication with the first container and the at least one additional container when the first container and the at least one additional container are connected to the console; and
[22.3]	a handpiece having a working end, the working end of the handpiece being configured to contact skin tissue of a subject during use;
[22.4]	wherein the working end of the handpiece is configured to be placed in fluid communication with a vacuum source to create a suction force along a distal end of the handpiece when the vacuum source is activated and the handpiece is connected to the console and wherein 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; and
[22.5]	a supply conduit that places the collection lumen in fluid communication with the working end of the handpiece when the handpiece is connected to the console;
[22.6]	wherein each of the first container and the at least one additional container includes treatment materials, and wherein treatment materials from the first container and the at least one additional container are configured to be delivered to the supply conduit sequentially when the

	first container and the at least one additional container are connected to the console.
Claim 23	
[23.1]	The system of claim 22, wherein the console comprises the vacuum source;
[23.2]	wherein the handpiece is in fluid communication with the vacuum source and a waste container through a waste conduit when the handpiece and the waste container are connected to the console; and
[23.3]	wherein the system is configured to deliver a first treatment fluid contained in the first container and an additional treatment fluid contained in the at least one additional container to the handpiece sequentially or simultaneously when the first container and the at least one additional container are connected to the console.
Claim 24	
[24]	The system of claim 22, further comprising a computing device configured to control at least one function of the system.
Claim 25	
[25]	The system of claim 24, further comprising a user input device to facilitate control of a flow of fluids from the first container and the at least one additional container to the handpiece.
Claim 26	
[26.pre]	A system for treating skin, the system comprising:
[26.1]	a console configured to receive a first container and at least one additional container;
[26.2]	a handpiece configured to contact skin tissue of a subject; and
[26.3]	a block in the console, wherein the block is: configured to selectively receive fluid from the first container when the first container is connected to the console; configured to selectively receive fluid from the at least one additional container when the at least one additional container is connected to the console; and, configured to selectively be in

	fluid communication with the handpiece through a first conduit when the handpiece is connected to the console; and
[26.4]	a vacuum source;
[26.5]	wherein the handpiece is configured to be in fluid communication with the vacuum source through a second conduit when the handpiece is connected to the console;
[26.6]	wherein the at least one additional container comprises a second container and a third container such that the console is configured to receive at least three containers; and
[26.7]	wherein when the handpiece is connected to the console and the first container, the second container and the third container each contains fluid and is connected to the console, the system is configured to deliver to the handpiece one at a time fluid contained in the first container, fluid contained in the second container, and fluid contained in the third container.
Claim 28	
[28.1]	The system of claim 26, wherein the console comprises the vacuum source; and
[28.2]	wherein the handpiece is in fluid communication with the vacuum source and a waste container through the second conduit when the handpiece is connected to the console.
Claim 29	
[29]	The system of claim 26, wherein the system is configured to deliver a first treatment fluid contained in the first container and an additional treatment fluid contained in the at least one additional container to the handpiece sequentially when the handpiece is connected to the console.
Claim 30	
[30]	The system of claim 26, further comprising a computing device configured to control at least one function of the system.

Claim 31	
[31]	The system of claim 30, further comprising a user input device to select a flow of fluids from the first container and the at least one additional container to the handpiece.
Claim 32	
[32]	The system of claim 31, wherein the user input device comprises a touch screen.
Claim 33	
[33]	The system of claim 32, further comprising a display.
Claim 34	
[34]	The system of claim 26, wherein the block is configured to control a flow of a first treatment fluid contained in the first container and an additional treatment fluid contained in the at least one additional container into the block with a valve when the first container and the at least one additional container are connected to the console.
Claim 35	
[35]	The system of claim 26, wherein the system is configured to control a flow of a first treatment fluid contained in the first container to the handpiece through the block when each of the first container and the handpiece is connected to the console.
Claim 36	
[36]	The system of claim 35, wherein the system is configured to separately control a flow of a second treatment fluid contained in the at least one additional container to the handpiece through the block when each of the first container, the at least one additional container, and the handpiece are connected to the console.
Claim 37	
[37.pre]	A system for treating skin, the system comprising:

[37.1]	a console configured to receive a first container and at least one additional container;
[37.2]	a handpiece configured to contact skin tissue of a subject; and
[37.3]	a block in the console, wherein the block is: configured to selectively receive fluid from the first container when the first container is connected to the console; configured to selectively receive fluid from the at least one additional container when the at least one additional container is connected to the console; and, configured to selectively be in fluid communication with the handpiece through a first conduit when the handpiece is connected to the console; and
[37.4]	a vacuum source;
[37.5]	wherein the handpiece is configured to be in fluid communication with the vacuum source through a second conduit when the handpiece is connected to the console;
[37.6]	wherein the system is configured to control a flow of a first treatment fluid contained in the first container to the handpiece through the block when each of the first container and the handpiece is connected to the console; and
[37.7]	wherein the system is configured to separately control a flow of a second treatment fluid contained in the at least one additional container to the handpiece through the block when each of the first container, the at least one additional container, and the handpiece are connected to the console.
Claim 39	
[39.1]	The system of claim 37, wherein the console comprises the vacuum source; and
[39.2]	wherein the handpiece is in fluid communication with the vacuum source and a waste container through the second conduit when the handpiece is connected to the console.

Claim 40	
[40]	The system of claim 37, wherein the system is configured to deliver the first treatment fluid contained in the first container and the second treatment fluid contained in the at least one additional container to the handpiece sequentially when the handpiece is connected to the console.
Claim 41	
[41]	The system of claim 37, further comprising a computing device configured to control at least one function of the system.
Claim 42	
[42]	The system of claim 41, further comprising a user input device to select a flow of fluids from the first container and the at least one additional container to the handpiece.
Claim 43	
[43]	The system of claim 42, wherein the user input device comprises a touch screen.
Claim 44	
[44]	The system of claim 43, further comprising a display.
Claim 45	
[45]	The system of claim 37, wherein the block is configured to control the flow of the first treatment fluid contained in the first container and the second treatment fluid contained in the at least one additional container into the block with a valve when the first container and the at least one additional container are connected to the console.

Petitioner Eunsung Global Corp. (“Eunsung”) petitions for *Inter Partes* Review of claims 1-12, 14-20, 22-26, 28-37, and 39-45 (“Challenged Claims”) of U.S. Patent No. 11,865,287 (“’287 patent”).

I. REQUIREMENTS

A. Grounds for Standing

Eunsung certifies that the ’287 patent is available for IPR. This petition is being filed within one year of service of a complaint against Eunsung. Eunsung is not barred or estopped from requesting this review.

B. Challenge and Relief Requested

Eunsung requests IPR and cancellation of the Challenged Claims on the grounds below.

Ground	Claims	Basis (§103)
1A	1-3, 8-12, 14-16, 22-23, 26, 28-29, 34-37, 39-40, 45	Karasiuk, Palmer
1B	1-10, 12, 17-20, 22-26, 28-36, 40-44	Karasiuk, Palmer, Trueba
2A	1-3, 8-12, 14-16, 22-23, 26, 28-29, 34-37, 39-40, 45	Greenberg
2B	1-10, 12, 17-20, 22-26, 28-36, 40-44	Greenberg, Trueba

The ’287 patent claims priority (not conceded) to a series of applications, the earliest filed December 30, 2005 (“Critical Date”). Applied references are §102(b) prior art:

Reference	Published Date
Karasiuk	11/13/2003
Palmer	4/6/1993
Greenberg	5/15/2003
Trueba	2/3/2004

C. Claim Construction

All claim terms should be construed according to *Phillips*. No formal claim constructions are necessary since “claim terms need only be construed to the extent necessary to resolve the controversy.” *Wellman*, 642 F.3d at 1361.

Petitioner reserves the right to respond to constructions offered by Patent Owner or adopted by the Board. Petitioner does not concede that the Challenged Claims satisfy all statutory requirements, including 35 U.S.C. §§101 and 112. Petitioner has applied prior art in a manner consistent with Patent Owner’s allegations of infringement.

D. Level of Ordinary Skill

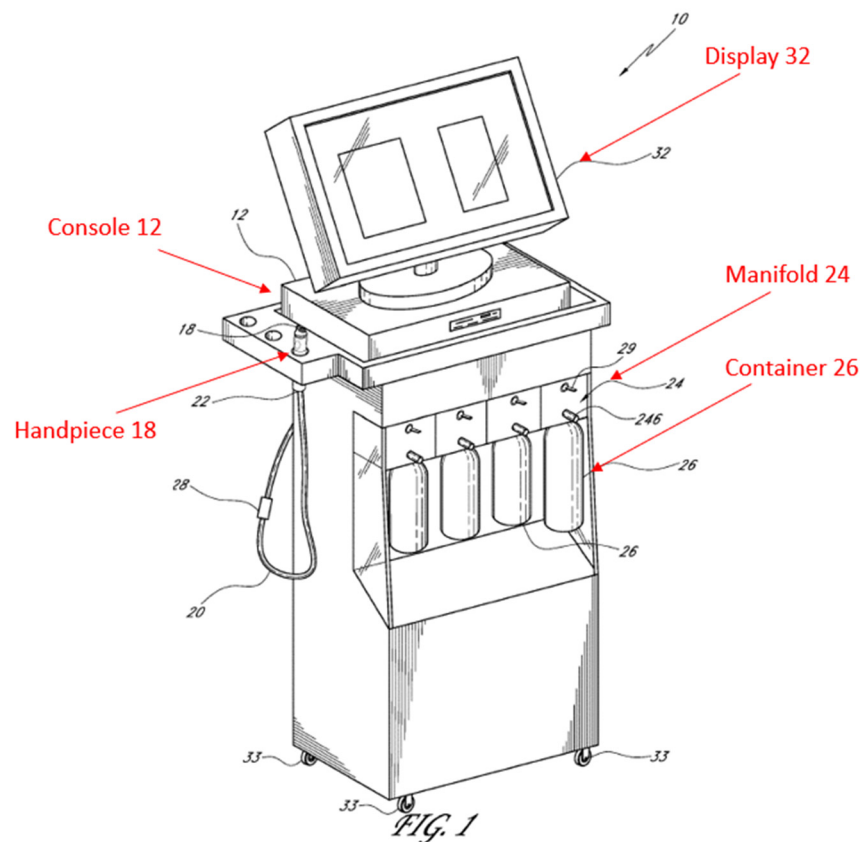
A person having ordinary skill in the art (POSITA) at the time of the alleged invention would have had an undergraduate degree (B.S.) in Mechanical Engineering or equivalent knowledge, training, or experience, with two years of work experience in the design of mechanical products, design of fluidic systems, 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. EUNSUNG-1003, [13]-[14].

II. '287 PATENT

A. Summary

The '287 patent describes a skin treating apparatus having a console with a user input device and a handpiece assembly. The apparatus includes a manifold system “configured to hold releasably a plurality of fluid sources and deliver fluid ... to the handpiece assembly.” EUNSUNG-1001, Abstract, FIG. 1; EUNSUNG-1003, [38]-[43]. The microdermabrasion disclosed in the '287 patent was well-known before the Critical Date. EUNSUNG-1003, [28]-[37].



EUNSUNG-1001, FIG. 1.¹

B. Prosecution History

The '287 patent was allowed after one office action. EUNSUNG-1002, 198-201; EUNSUNG-1003, [44]-[47]. The action indicated allowable subject matter, and applicant accepted it. EUNSUNG-1002, 166, 62. The examiner did not consider Palmer or Trueba. Karasiuk and Greenberg were buried in an IDS containing over 400 references. EUNSUNG-1002, 229; *infra* §IV.A.

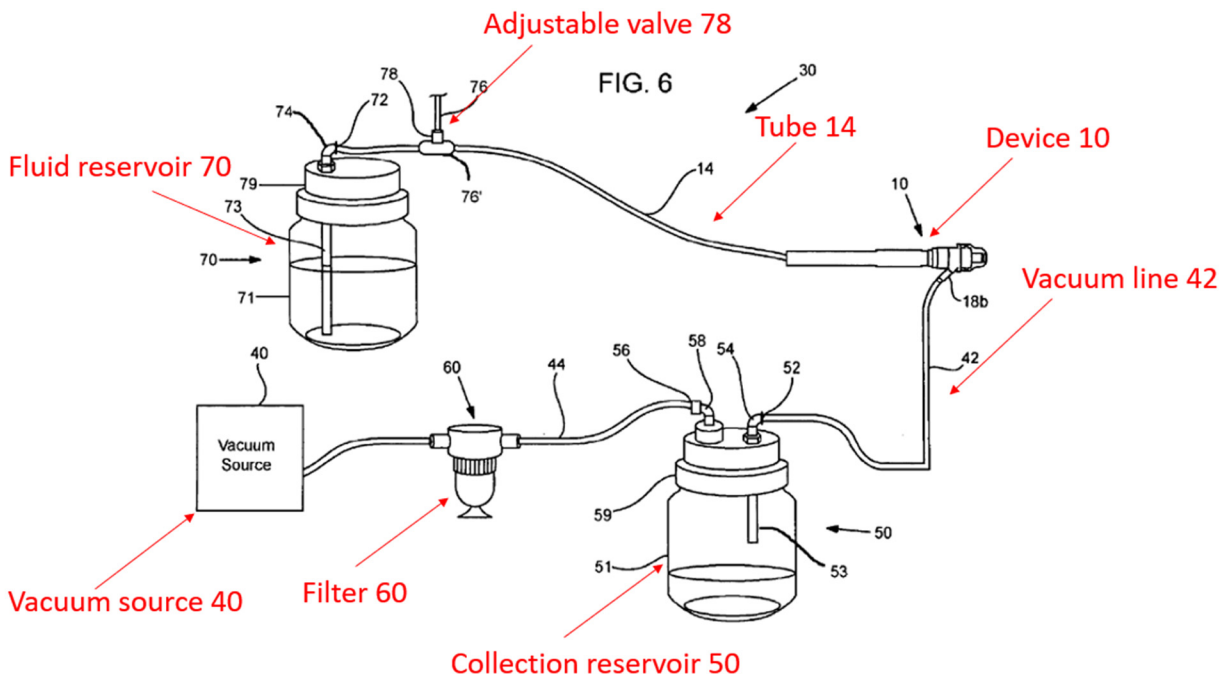
III. THE CHALLENGED CLAIMS ARE UNPATENTABLE

A. [GROUND 1A]: Karasiuk-Palmer

1. Karasiuk

Karasiuk's system conducts microdermabrasion procedures using a hand-piece that delivers (from fluid reservoir 70) a fluid treatment solution and retrieves the resulting waste/debris (into collection reservoir 50). EUNSUNG-1004, Abstract, [0044]-[0045], [0063]-[0066], FIG. 6; EUNSUNG-1003, [48]-[55].

¹ Annotations are added unless indicated otherwise.



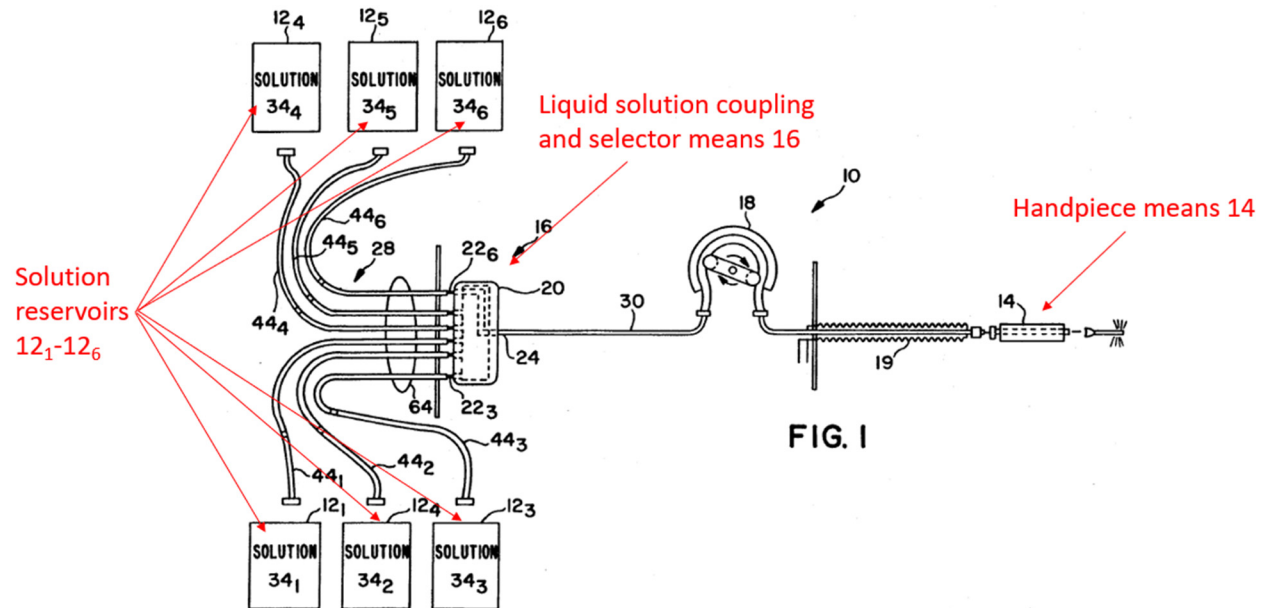
Karasiuk, FIG. 6

Karasiuk's system includes handpiece 10 (also referred to as "device 10"), vacuum source 40, and fluid reservoir 70. EUNSUNG-1004, [0056]. Handpiece 10 is connected to collection reservoir 50 and vacuum source 40 by a vacuum line (e.g., vacuum lines 42, 44, and/or 46), and also connected to fluid container 70 via tube 14. EUNSUNG-1004, [0059].

In operation, “the fluid contents in fluid reservoir 70 are drawn through tube 14 and into device 10 where they flow out of the cannula 16 through openings 16d and are applied to the skin.” EUNSUNG-1004, [0063]-[0064]. “As the flow of the 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].

2. Palmer

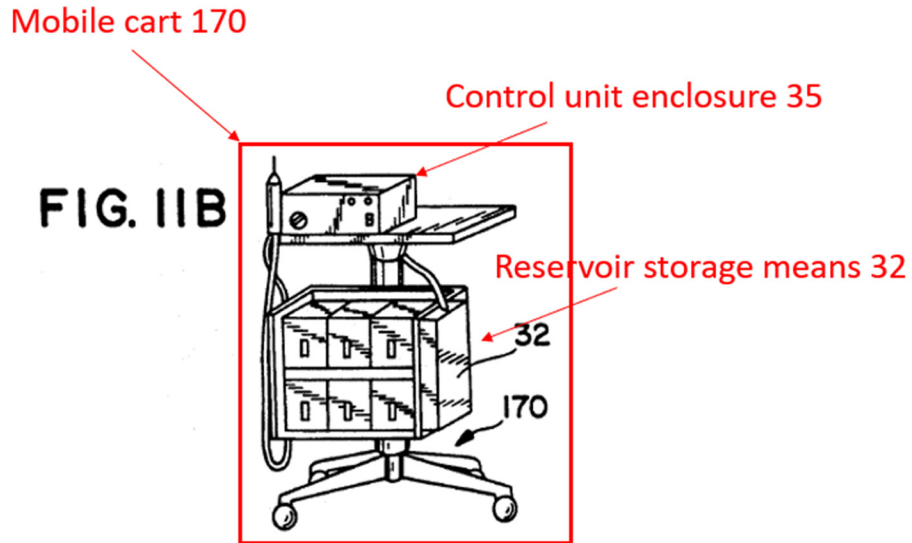
Palmer discloses a medical device system for delivering a selected fluid treatment solution to an application site through a handpiece. EUNSUNG-1003, [56]-[59]; EUNSUNG-1005, Abstract, 4:50-68, FIG. 1.



Palmer, 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.

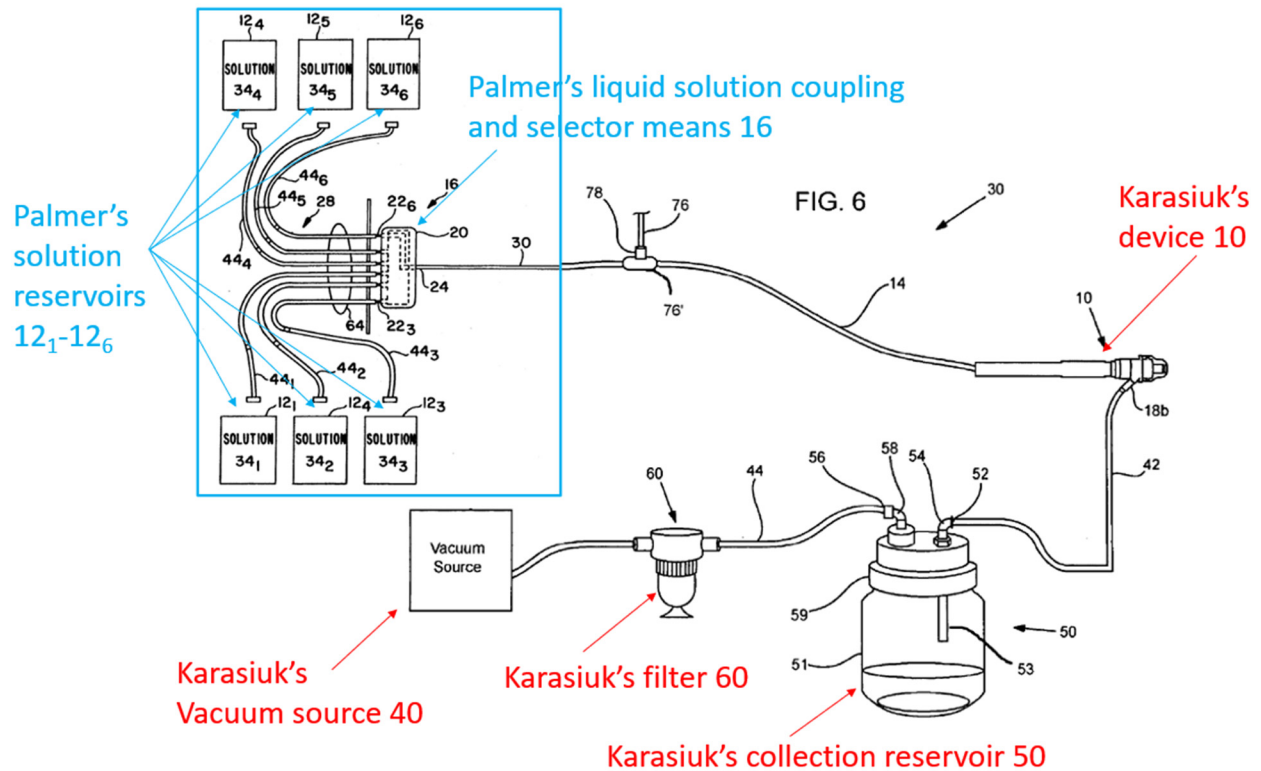
As shown in FIG. 11B, Palmer's "mobile cart 170" receives control unit enclosure 35 and "reservoir storage means 32 in the form of modular single-shelf racks" for increased portability and/or organization. EUNSUNG-1005, 9:58-10:16.



Palmer, FIG. 11B

3. Karasiuk-Palmer Combination

In Karasiuk-Palmer, Karasiuk's reservoir 70 would have been modified based on Palmer's teachings of multiple containers (e.g., reservoirs 12₁-12₆) and selector means 16, an example of which is illustrated in Modified FIG. 6. EUN-SUNG-1003, [71]-[90].



Karasiuk, Modified FIG. 6

In the combination, Karasiuk's vacuum source would be used to pump treatment solutions from Palmer's multiple fluid containers and collect waste/debris. EUNSUNG-1003, [72]; EUNSUNG-1004, [0020], [0056], [0064]-[0066]. Instead of being connected to single reservoir 70, Karasiuk's tube 14 (e.g., upstream of breather line 76) would replace, or be connected to, Palmer's second tubing means 30 to achieve benefits resulting from selection of different treatment solutions. *Id.* In the resulting system, the vacuum source performs pumping the treatment solution and removing waste/debris, according to Karasiuk. *Id.*; EUNSUNG-1004, [0020], [0056], [0064]-[0066].

Additionally, a POSITA would have been motivated and found it obvious to place (1) multiple containers and selector means (as taught by Palmer) and (2) handheld device 10, collection reservoir 50, vacuum source 40, and other relevant components (as taught by Karasiuk) in a modular structure (e.g., Palmer's mobile cart 170) for known benefits, such as increased portability and organization. EUNSUNG-1003, [73]. Palmer recognizes that "[b]y providing the reservoir storage means 32 in the form of modular single-shelf racks, a high degree of flexibility is provided." EUNSUNG-1005, 9:63-10:2, FIGS. 11A-11C. Indeed, such a modular configuration for medical devices was well-known before the Critical Date. EUNSUNG-1003, [73]-[77].

Several reasons would have prompted a POSITA to modify Karasiuk's system based on Palmer's teachings. EUNSUNG-1003, [78]-[88]. As discussed in §III.A.1, Karasiuk's system uses a handpiece for applying a fluid treatment solution to a treatment site and a vacuum for collecting waste during microdermabrasion. EUNSUNG-1004, Abstract, [0044]-[0045], [0056]-[0059], [0063]-[0066], FIG. 6; EUNSUNG-1003, [78]. Based on general knowledge and Karasiuk's disclosure, a POSITA would have recognized the desirability of using multiple types of treatment solutions during microdermabrasion. EUNSUNG-1003, [78]-[79] (discussing EUNSUNG-1013 and EUNSUNG-1016); EUNSUNG-1004, [0024] ("other solutions or compounds offering various benefit(s)."), [0047] ("application

of lotions/vitamins or other fluids”), [0061] (listing various treatment solutions).

Further, Karasiuk appreciates that “various changes may be made and equivalents may be substituted without departing from the true spirit and scope of the invention.” EUNSUNG-1004, [0070]. From this disclosure and POSITA’s general knowledge, a POSITA would have been motivated to consider use of multiple containers of treatment solutions to improve the flexibility and functionality offered by Karasiuk’s system. EUNSUNG-1003, [80]; *In re Harza*, 274 F.2d 669, 671 (CCPA 1960) (mere duplication of parts carries no patentable significance). Indeed, as Mr. Simon explains, fluid delivery techniques required to use multiple containers with Karasiuk’s handpiece were well-known and part of a POSITA’s general knowledge. EUNSUNG-1003, [80]-[84] (citing EUNSUNG-1005, EUNSUNG-1008, EUNSUNG-1007, EUNSUNG-1011, EUNSUNG-1020).

With this motivation and knowledge, a POSITA would have investigated other references such as Palmer to achieve benefits offered by multiple treatment solutions. EUNSUNG-1003, [85]. First, a POSITA would have been motivated to modify Karasiuk based on Palmer’s multiple containers and selector means to allow easy selection among multiple treatment solutions. EUNSUNG-1003, [85]; EUNSUNG-1005, 1:30-53, 2:48-4:2. Palmer recognizes that “[c]onventional irrigation arrangements...generally do not provide the opportunity of easy selection

among several irrigant solutions.” EUNSUNG-1005, 1:30-53. “If circumstances require the use of a different treatment solution, ... the solution remaining in the tank is usually discarded and the tank must be cleaned and refilled with the new solution,” which “is time-consuming and costly, not to mention messy.” *Id.* Palmer’s solution with multiple containers and selector means addresses this problem. EUNSUNG-1005, Abstract, 2:48-4:2, cl.1, FIG. 1; EUNSUNG-1003, [85].

Second, the combination would enable sequential delivery of different treatment solutions. EUNSUNG-1003, [86]. In this regard, Palmer discloses “[w]hen treatment with the particular irrigating solution is completed, the system can be either switched to another solution,” so that “a patient may be treated with two or more solutions during the same procedure, one after the other.” EUNSUNG-1005, 11:9-12, 6:46-51.

Third, the combination would minimize 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. EUNSUNG-1003, [87]; EUNSUNG-1011, 2:7-10.

Fourth, a POSITA would have been motivated to adopt Palmer’s modular design to provide added flexibility, organization, and portability. EUNSUNG-1003, [88]; EUNSUNG-1005, 9:58-10:2. Palmer discloses “[b]y providing the reservoir storage means 32 in the form of modular single-shelf racks, a high degree of

flexibility is provided” and “the reservoir storage means can be placed on a countertop 168 (FIG. 11A), or on a mobile cart 170 (FIG. 11B) or in a cabinet 172 underneath a counter (FIG. 11C).” EUNSUNG-1005, 9:58-10:2. A POSITA would have viewed these modular/mobile benefits of Palmer as applicable to microdermabrasion systems like Karasiuk’s, and would have been motivated to use Palmer’s console design in the microdermabrasion system resulting from the combination. EUNSUNG-1003, [88].

A POSITA would have had a reasonable expectation of success in such a combination. EUNSUNG-1003, [89]-[90]. Both Karasiuk and Palmer are directed to medical devices that deliver treatment solutions to treatment sites via a hand-piece. EUNSUNG-1003, [89]; EUNSUNG-1004, Abstract, [0013]-[0015], FIG. 6; EUNSUNG-1005, Abstract, 1:10-15, FIG. 1; EUNSUNG-1006, [0003]; EUNSUNG-1001, 6:53-56. Although Palmer describes an example of dental work, Palmer’s disclosure “relates generally to methods and apparatus for delivering liquid solutions to treatment sites.” EUNSUNG-1005, 1:10-11. From this, a POSITA would have understood and found obvious that Palmer’s teachings are applicable to delivering fluids for other medical procedures (e.g., microdermabrasion). EUNSUNG-1003, [89]. As Mr. Simon noted, by the Critical Date, fluid delivery systems and techniques were largely compatible and were used interchangeably across various applications without undue experimentation. *Id.* (citing EUNSUNG-1011).

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. EUNSUNG-1003, [90]. This replacement would also reflect the use of a known technique to improve similar devices in the same way. *Id.*

4. Claim 1

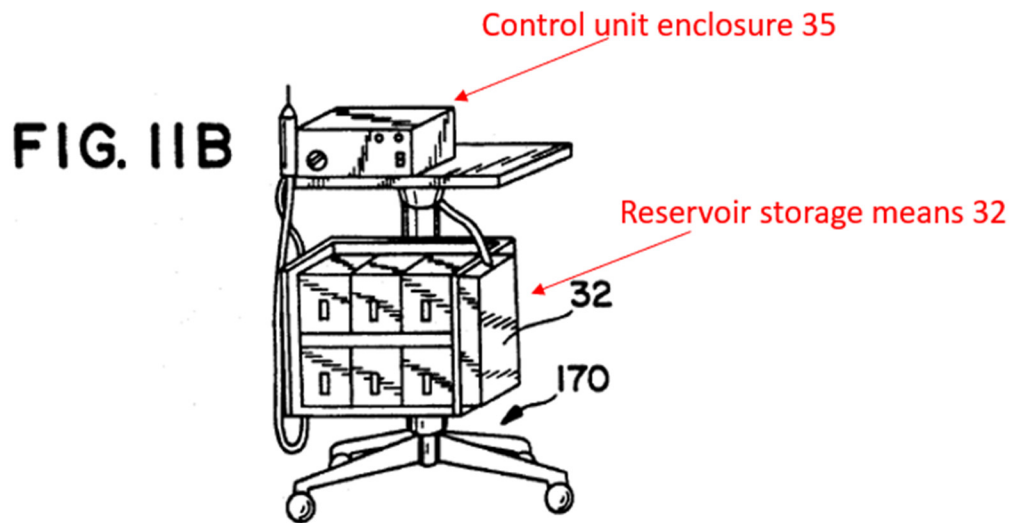
[1.pre]

To the extent the preamble is limiting, Karasiuk describes “microdermabrasion device, ***microdermabrasion system*** employing the device.” EUNSUNG-1004, [0014], Abstract, FIG. 6; EUNSUNG-1003, [91]; *see* §III.A.3; *infra* [16]²

[1.1]

The Karasiuk-Palmer system includes a ***console*** in the form of, for example, “mobile cart 170” that receives Palmer's multiple containers (reservoir storage means 32 receiving multiple reservoirs) and selector means (control unit enclosure 35), and also receives Karasiuk's handheld device 10, collection reservoir 50, vacuum source 40, and other relevant components in a modular structure. §III.A.3; EUNSUNG-1005, 9:58-10:2, FIGS. 11A-11C; EUNSUNG-1003, [92]-[100].

² All emphasis is added unless indicated otherwise.



Palmer, FIG. 11B

This aligns with the '287 patent's disclosure of console that receives multiple containers, valve system, handpiece, vacuum pump, and waste container, and is placed on four casters for "easy movement." EUNSUNG-1001, 14:38-48, 9:18-20, 18:38-55, 11:5-6, 6:6-14, 7:47-48; EUNSUNG-1003, [93]-[94].

Further, a POSITA would have been motivated and found it obvious to place Karasiuk-Palmer's system in a console for known benefits, such as increased portability and organization. EUNSUNG-1003, [95]. Indeed, as Mr. Simon explains, using a console to house similar medical devices was well-known and would have been within a POSITA's general knowledge. EUNSUNG-1003, [95]-[100] (discussing EUNSUNG-1010, EUNSUNG-1005, EUNSUNG-1011, EUNSUNG-1020). A POSITA would have had a reasonable expectation of success in placing Karasiuk-Palmer's components in a console, as it would constitute the use of a

known technique to improve similar devices in the same way. *Id.*

Again, Karasiuk-Palmer describes six solution reservoirs in the modular structure (*console*), which would have been understood as *first and at least one additional containers* received at the console. EUNSUNG-1003, [100]; §III.A.3.

[1.2]

Karasiuk-Palmer includes a handpiece configured to contact skin tissue of a subject, such as Karasiuk's "[d]evice 10" (FIG. 6) designed to be "**handheld by a user** for its application to the skin of a patient." EUNSUNG-1004, [0044]-[0047], [0063]; EUNSUNG-1003, [101]-[104].

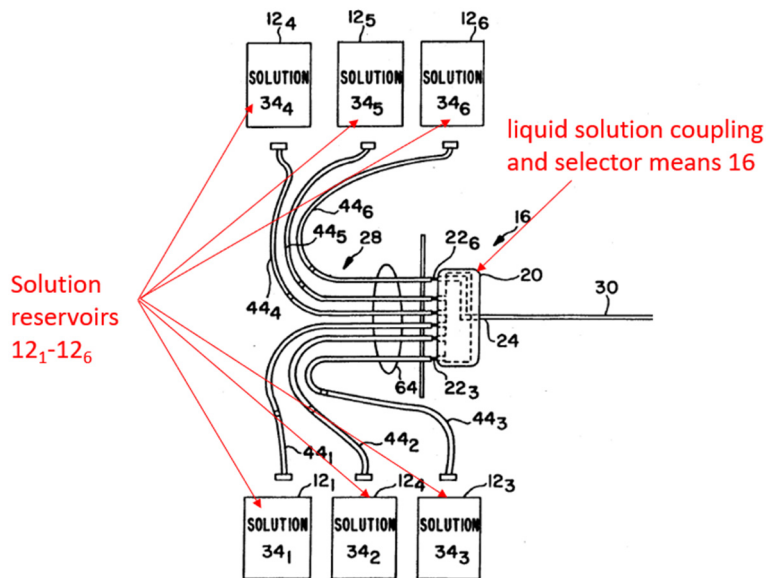
Similarly, Palmer describes "handpiece means 14" (FIG. 1) for "delivering a selected one of the liquid solutions contained in one of the reservoirs 12 directly to a treatment site." EUNSUNG-1005, 4:57-60; EUNSUNG-1003, [103].

[1.3]

As discussed in [1.1], Karasiuk-Palmer's solution reservoirs (*first and at least one additional containers*) and device 10 (*handpiece*) are connected to its modular structure (e.g., "mobile cart 170") (*console*). EUNSUNG-1003, [105].

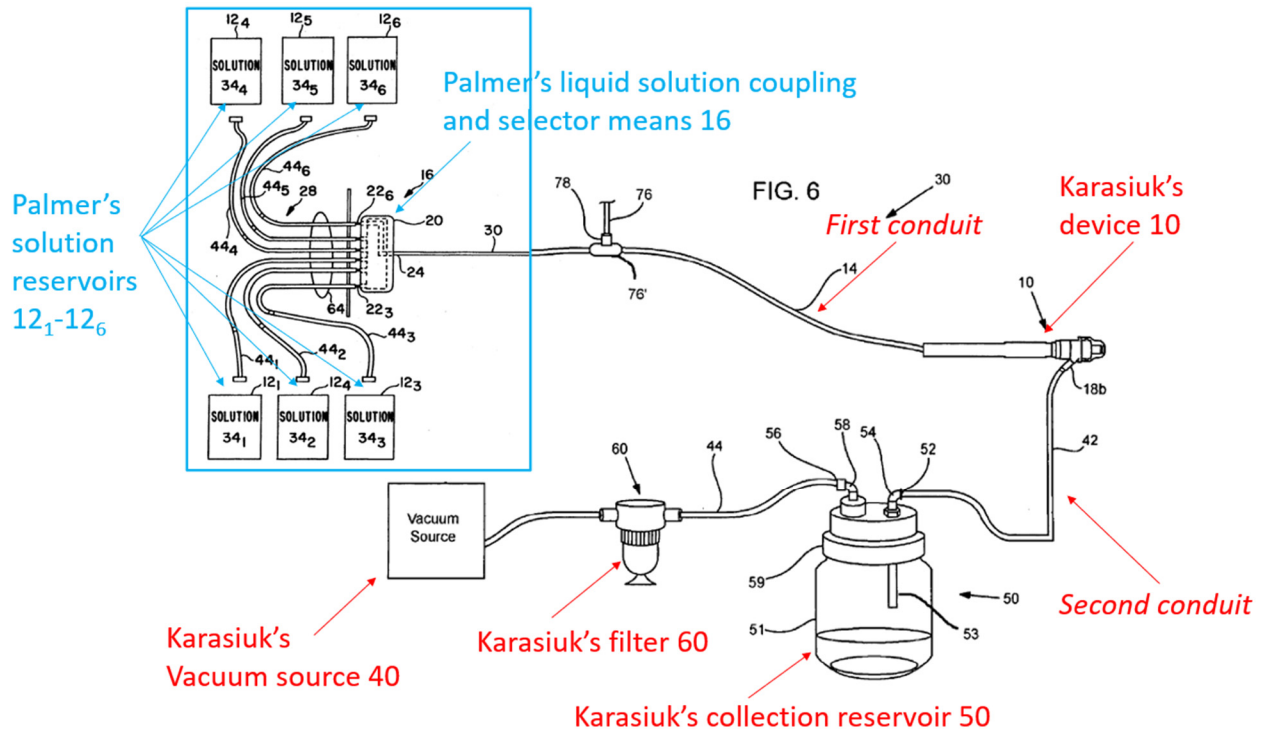
Karasiuk-Palmer describes a *block* based on Palmer's teaching of "liquid solution coupling and selector means 16" that is included in the control unit enclosure 35 and configured for coupling handpiece means 14 to a selected one of the liquid solutions in a respective solution reservoir 12. EUNSUNG-1005, 4:60-63,

5:1-14; EUNSUNG-1003, [105].³ As shown in Palmer's FIG. 1 and Modified Karasiuk's FIG. 6, Palmer's "liquid solution coupling and selector means 16 include[s] selector valve means 20 having a plurality of inputs 22, an output 24, and means for coupling a selected one of the inputs 22 to the output 24." EUNSUNG-1005, 5:1-9.



Palmer, FIG. 1 (partial)

³ The '287 patent's specification is silent as to the term "block" while it allegedly describes "manifold" as performing similar functionalities. EUNSUNG-1001, 5:28-30, Abstract. Notably, other patents in the '287 patent's family recite the "manifold" for similar limitations in the claims. EUNSUNG-1017, cl.1; EUNSUNG-1018, cl.1. Therefore, in the '287 patent, Patent Owner appears to use "block" to seek broader protection. EUNSUNG-1003, [106].

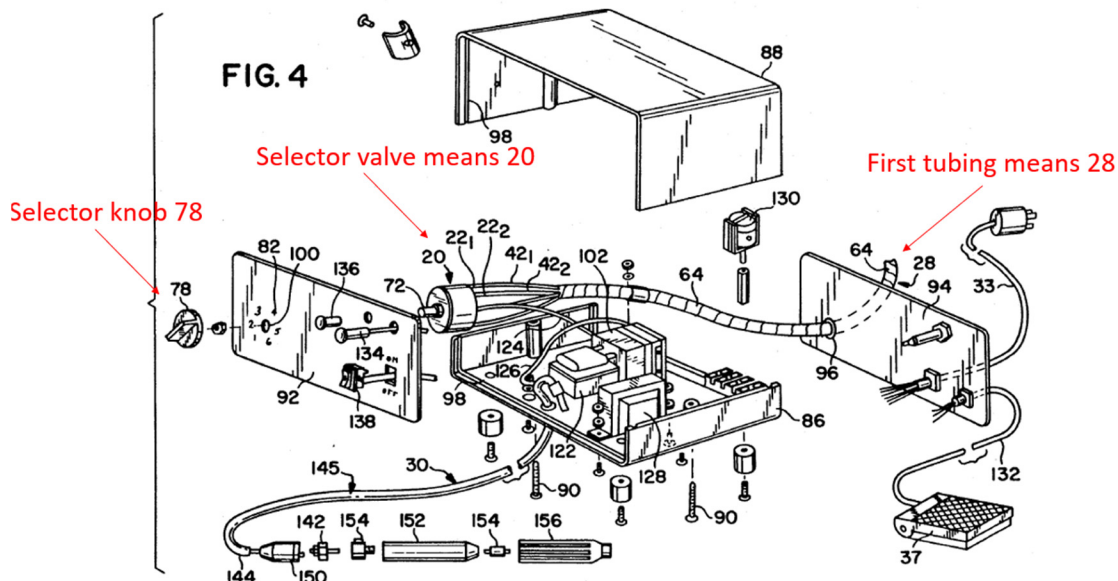


Karasiuk, Modified FIG. 6

Therefore, a POSITA would have understood and found obvious that (1) Palmer's selector valve 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 **block**. EUNSUNG-1003, [107]. These components are (1) configured to selectively receive fluid from the first container (e.g., Palmer's reservoir 12₁) when the first container is connected to the console, (2) configured to selectively receive fluid from the at least one additional container (e.g., Palmer's reservoir 12₂) when the at least one additional container is connected to the console, and (3) configured

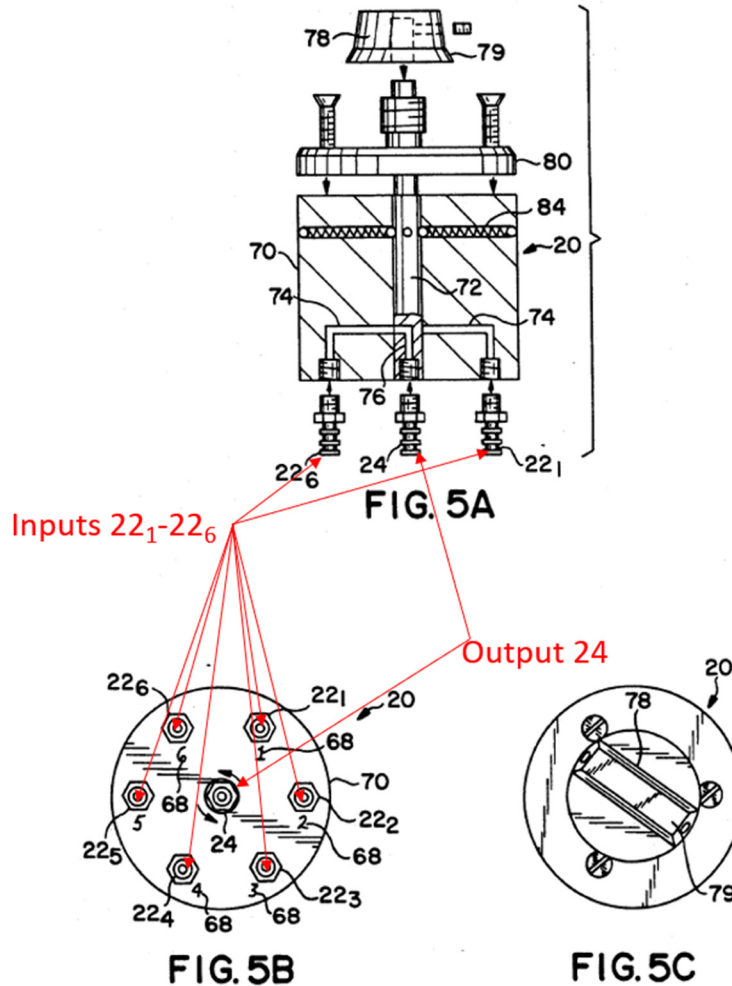
to selectively be in fluid communication with the handpiece (e.g., Karasiuk's device 10) through a first conduit (e.g., Karasiuk's tube 14 or collectively Palmer's second tubing means 30, Karasiuk's T joint 76', and Karasiuk's tube 14) when the handpiece is connected to the console (e.g., Palmer's mobile cart 170). *Id.*; EUNSUNG-1005, 5:1-18.

Additionally, Karasiuk-Palmer describes "manifold," which the '287 patent allegedly describes as corresponding to the *block*. EUNSUNG-1001, 5:28-30. For example, Palmer's FIG. 4 shows an exploded view of control unit enclosure 35 including first tubing means 28, **selector valve means 20** (connected via valve inputs 22₁-22₆ to solution reservoirs 12₁-12₆), and selector knob 78. EUNSUNG-1005, 8:22-9:16, FIG. 4; EUNSUNG-1003, [107]-[108].



Palmer, FIG. 4

Palmer illustrates an exemplary selector valve means 20 in FIGS. 5A-5C.



Palmer, FIGS. 5A-5C

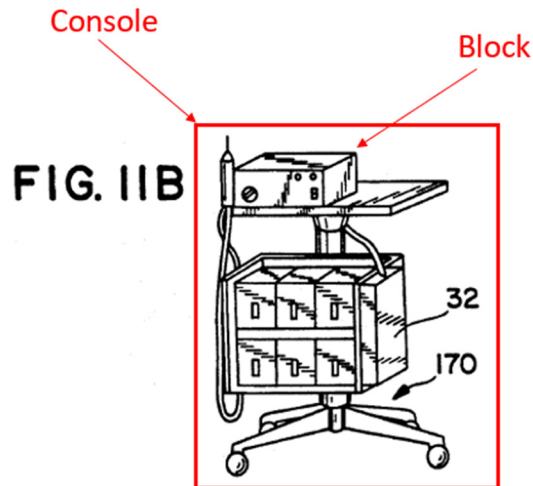
Referring to FIGS. 5A-5B, selector valve means 20 includes main body 70 defining multiple “liquid inlet passages 74” with multiple “input port[s] 22” and “liquid outlet passage 76” with “selector valve output port 24.” EUNSUNG-1005, 8:6-21. Further, main body 70 defines a “bore which receives the rotatable core 72 in a plane common with the inner ends of the other inlet passages 74.” *Id.* The “liquid outlet passage 76 is formed in the rotatable core 72 having one end opening into the selector valve output port 24 and another end opening onto the cylindrical

core surface in the plane of the inner ends of passages.” *Id.* As explained by Mr. Simon, this structure corresponds to the “manifold” described in the ’287 patent. EUNSUNG-1003, [109].

Alternatively, to the extent Patent Owner argues that the **block** requires a manifold and that Karasiuk-Palmer does not disclose it, a POSITA would have found it obvious to use a manifold to implement Palmer’s functionality of switching treatment fluids. EUNSUNG-1003, [110]-[112]. Indeed, manifolds were well-known devices for selecting between different fluids and would have been within a POSITA’s general knowledge. EUNSUNG-1003, [112] (discussing EUNSUNG-1010, EUNSUNG-1019 thru EUNSUNG-1022). Indeed, a POSITA would have viewed a manifold as one of a finite number of options to achieve the functionality described by Palmer that would have been obvious to try. *Id.* A POSITA would have had a reasonable expectation of success in implementing Palmer’s switching between different fluids and providing a single fluid output using a manifold as it would have merely involved a simple substitution of one well-known element for another to obtain predictable results. *Id.*

Lastly, Palmer’s control unit enclosure 35 (**block**), which includes the coupling and selector means 16 having the valve 20, is included in “mobile cart 170” (**console**). EUNSUNG-1003, [113]-[114]; EUNSUNG-1005, 9:58-10:16, 4:53-5:14, 8:22-9:16, FIG. 11B. Further, a POSITA would have found obvious that

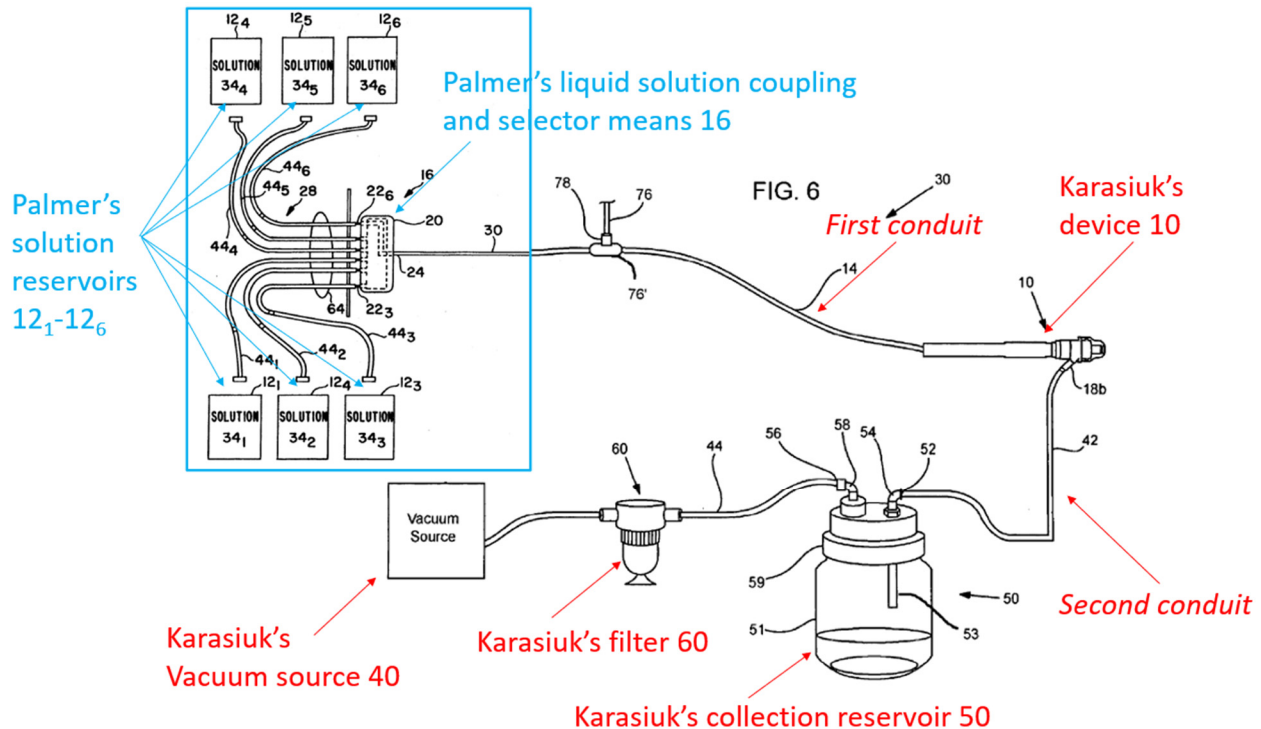
Karasiuk's device 10 (*handpiece*) is connected to "mobile cart 170" (*console*), as illustrated in Palmer. EUNSUNG-1003, [113]-[115]; EUNSUNG-1005, FIG. 11B.



Palmer, FIG. 11B

[1.4]

As discussed in §III.A.3, the Karasiuk-Palmer system uses Karasiuk's "vacuum source 40" to pump the treatment fluids and remove waste/debris as intended in Karasiuk. EUNSUNG-1003, [116]; EUNSUNG-1004, [0056].



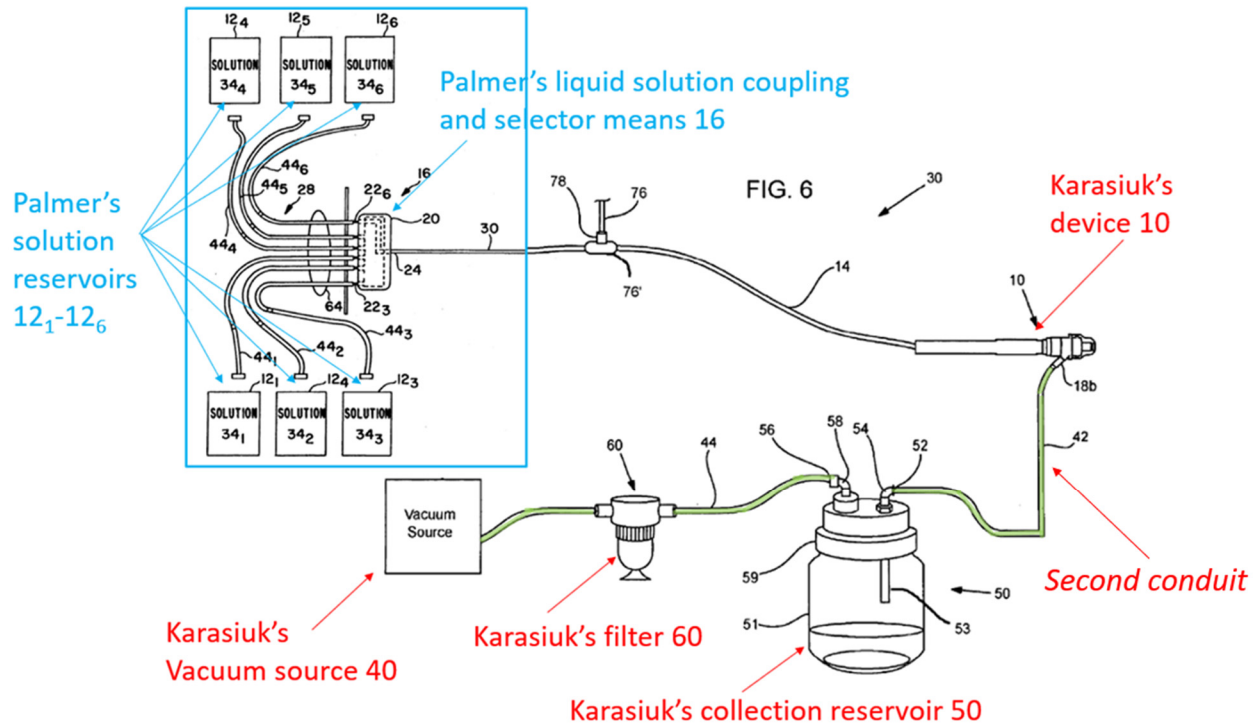
Karasiuk, Modified FIG. 6

As discussed in §III.A.3, a POSITA would have been motivated and found it obvious to include the vacuum source in the console (e.g., Palmer's mobile cart 170) for known benefits. EUNSUNG-1003, [117]; *supra* [1.1].

[1.5]

In Karasiuk-Palmer, Karasiuk's handpiece includes "[v]acuum opening 18b" in fluid communication with "vacuum source 40" through the "vacuum line between device 10 and vacuum source 40" (e.g., collectively vacuum line 42, second vacuum line 44, vacuum line 46) (respectively or collectively a **second conduit**) when the handpiece is connected to Palmer's "liquid solution coupling and selector means 16" arranged at "mobile cart 170" (**console**; *see* [1.1]). EUNSUNG-1004,

[0056], FIG. 6; EUNSUNG-1005, 4:50-68, 9:58-10:2, FIGS. 1, 11B; EUNSUNG-1003, [118]-[120].

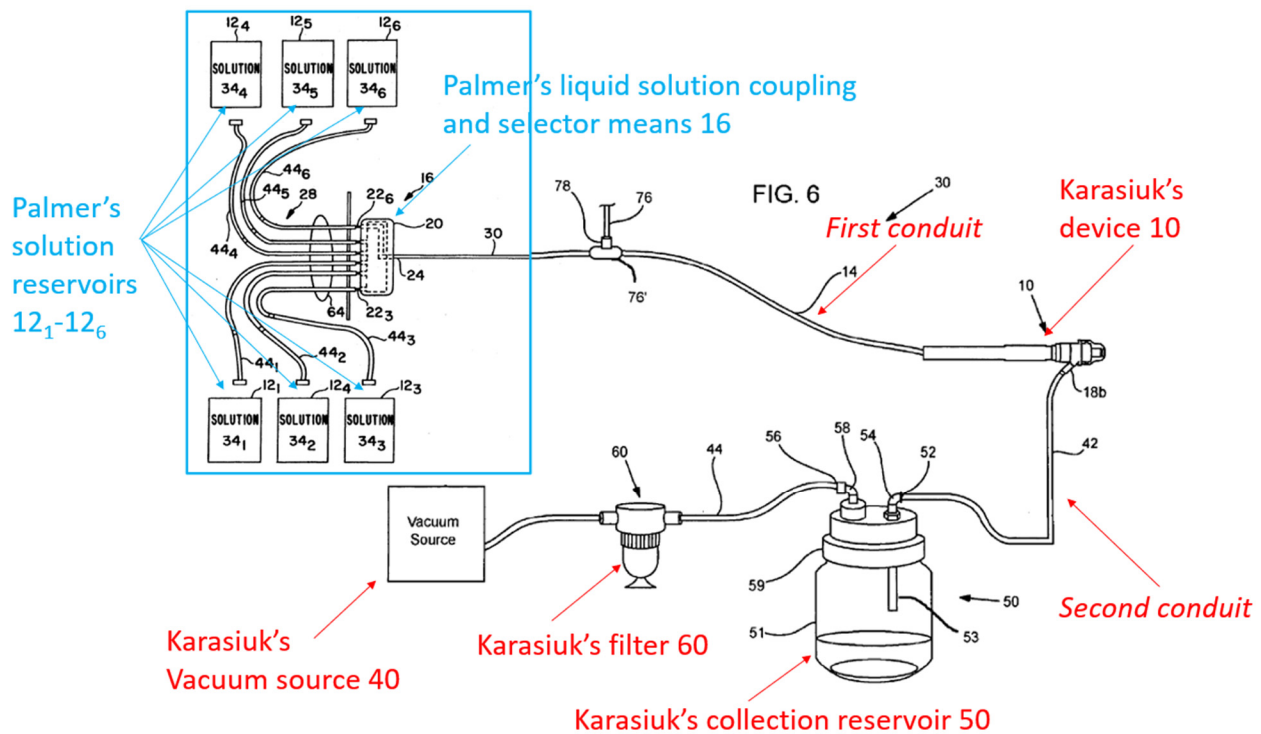


Karasiuk, Modified FIG. 6

As discussed in [1.3], Karasiuk's *handpiece* is connected to the *console* ([1.1]). EUNSUNG-1003, [121]. As discussed in [1.4], Karasiuk's "vacuum source 40" is used to pump treatment fluids and remove waste/debris. *Id.* As shown in Karasiuk's modified FIG. 6, a POSITA would have understood and found obvious that Karasiuk's "vacuum source 40" is fluidly connected to Karasiuk's collection reservoir 50, which is *in fluid communication with* Karasiuk's vacuum source 40. *Id.*

[1.6]

As discussed in §III.A.3, Karasiuk-Palmer replaces Karasiuk's reservoir 70 with Palmer's multiple reservoirs and "liquid solution coupling and selector means 16" to thereby allow selection of different treatment solutions. EUNSUNG-1003, [122]. As discussed in [1.3], Karasiuk's handpiece and Palmer's reservoirs (*first and at least one additional containers*) are each connected to Palmer's "liquid solution coupling and selector means 16" arranged at "mobile cart 170" (*console*; see *supra* [1.1]). *Id.*



Karasiuk, Modified FIG. 6

As discussed in [1.5], Karasiuk describes "collection reservoir 50" (including "reservoir 51") (*waste container*) for receiving "waste materials (abraded skin

particles, and optionally, fluids)” “removed through the microdermabrasion process.” EUNSUNG-1004, [0056], [0064]-[0066]. As shown in FIG. 6, “reservoir 51” is connected to “opening or port 18b” of the handpiece via “vacuum line 42,” and the handpiece is connected to Palmer’s “liquid solution coupling and selector means 16” (part of the *console*; *supra* [1.1]) via “tube 14.” EUNSUNG-1004, [0056]; EUNSUNG-1003, [123]. Thus, Karasiuk’s reservoir 51 (*waste container*) is connected to the *console*. EUNSUNG-1003, [123]. Further, in the resulting system, Karasiuk’s collection reservoir would have been placed in Palmer’s modular structure (e.g., “mobile cart”) for similar reasons discussed in §III.A.3. *Id.*

Also, Palmer’s reservoirs each include “a respective liquid solution” with a unique color coding. EUNSUNG-1005, 4:53-57, 5:37-6:32; EUNSUNG-1003, [124]. Karasiuk also recognizes the desirability of using multiple types of skin treatment solutions during microdermabrasion. EUNSUNG-1003, [125]; EUNSUNG-1004, [0024], [0047], [0061]. In Karasiuk-Palmer, it would have been obvious to use Palmer’s multiple containers to hold different treatment fluids as taught by Karasiuk and Palmer—for example, a first container holding an antioxidant formulation and a second container holding a hydrating formulation. EUNSUNG-1003, [126]-[128] (discussing EUNSUNG-1027, EUNSUNG-1004, EUNSUNG-1005, EUNSUNG-1013, and EUNSUNG-1016).

[1.7]

As discussed in [1.5]-[1.6], Karasiuk's handpiece is in fluid communication with "vacuum source 40" through a vacuum line (e.g., collectively vacuum line 42, second vacuum line 44, vacuum line 46) (respectively or collectively *second conduit*). EUNSUNG-1004, [0056], FIG. 6; EUNSUNG-1003, [129]. Further, Karasiuk's "collection reservoir 50" (*waste container*) is "connected in the vacuum line between [handpiece] 10 and vacuum source 40." EUNSUNG-1004, [0021], [0056]-[0057]; EUNSUNG-1003, [129]-[131].

[1.8]

As discussed in §III.A.3, Karasiuk-Palmer includes "a **selector valve** for fluidly coupling the handpiece to a selected one of the liquid solutions" contained in "a plurality of solution reservoirs 12," as taught by Palmer. EUNSUNG-1005, Abstract, 4:50-63, 8:6-21, FIGS. 1, 5A-5C; EUNSUNG-1003, [132]-[133]. As discussed in [1.6], the reservoirs in the combination (*first and at least one additional containers*) contain different solutions (*first and additional treatment fluids*). EUNSUNG-1005, 4:50-63; EUNSUNG-1003, [132]-[133].

In operation, "a patient may be treated with two or more solutions during the same procedure, **one after the other**," and "[w]hen treatment with the particular irrigating solution is completed, **the system can be ... switched to another solu-**

tion.” EUNSUNG-1005, 6:46-51, 11:9-12. Karasiuk recognizes desirability of using multiple types of skin treatment solutions during microdermabrasion. EUNSUNG-1003, [134]; EUNSUNG-1004, [0024], [0047], [0061]. Therefore, the Karasiuk-Palmer system would have used Palmer’s multiple containers to *sequentially* deliver different skin treatment solutions—for example, a first container holding an antioxidant formulation (e.g., vitamin) and a second container holding a hydrating formulation (e.g., lotion). §III.A.3; EUNSUNG-1003, [134]-[136] (discussing EUNSUNG-1004, EUNSUNG-1005, EUNSUNG-1013, and EUNSUNG-1016).

5. Claim 2

The Karasiuk-Palmer system would have included at least three containers (e.g., six) received in the console (e.g., mobile cart 170), as taught by Palmer. EUNSUNG-1003, [137]-[139]; EUNSUNG-1005, 4:53-63 (“a plurality of solution reservoirs 12 (six shown)”), 6:66-7:2. Palmer’s multiple solution reservoirs would have been understood as a *first container* and *at least one additional container* having *second and third containers*. In Karasiuk-Palmer, it would have been obvious to use Palmer’s multiple containers to hold different treatment fluids as taught by Palmer and Karasiuk—for example, a first container holding an antioxidant formulation, a second container holding a hydrating formulation, and a third container holding a sunscreen. EUNSUNG-1003, [138]-[139] (discussing EUNSUNG-1004,

EUNSUNG-1005, EUNSUNG-1013, and EUNSUNG-1016); *supra* [1.8].

6. Claim 3

As discussed in §III.A.3 and at [1.5], [1.6], [1.8] and [2], Karasiuk-Palmer includes at least three containers that contain different fluids and are connected to the console. EUNSUNG-1003, [140]. Further, as Palmer describes, the resulting system operates to connect the handpiece to a selected container one at a time so that “a patient may be treated with two **or more** solutions during the same procedure, **one after the other.**” EUNSUNG-1005, 11:9-12, 6:46-51; EUNSUNG-1003, [140].

In Karasiuk-Palmer, it would have been obvious to use Palmer’s three containers to deliver to the handpiece one at a time different treatment solutions as taught by Palmer and Karasiuk—for example, a first container holding an antioxidant formulation, a second container holding a hydrating formulation, and a third container holding a sunscreen. EUNSUNG-1003, [141]-[142] (discussing EUNSUNG-1004, EUNSUNG-1005, EUNSUNG-1013, and EUNSUNG-1016).

7. Claim 8

See [1.1], [1.3], [1.8] as to the first container and the at least one additional container being connected to the console. EUNSUNG-1003, [92]-[100], [105]-[115], [132]-[136].

See [1.6] as to the first and at least one additional containers) containing the

As discussed in [1.3] and [1.8], Karasiuk-Palmer's block (e.g., selector means 16 having selector valve 20, or the control unit enclosure 35 housing selector means 16) is configured to control a flow of the treatment solutions contained in respective containers into the block via a valve (e.g., selector valve 20) by, for example, sequentially delivering the treatment solutions from respective containers to the handpiece through the block. EUNSUNG-1003, [132]-[136], [145]-[147]; EUNSUNG-1005, Abstract, 5:13-16, 8:6-21, FIGS. 1, 4, 5A-5C.



Alternatively or additionally, Karasiuk describes “**an adjustable valve 78** or other means for varying an amount of air that is allowed into the tube 14.” EUNSUNG-1004, [0059], FIG. 6; EUNSUNG-1003, [148]. Karasiuk also discloses “a valve or other flow control mechanism may be provided in fluid delivery line 14 to control the amount of liquid passing through the line.” *Id.* In Karasiuk-Palmer, a POSITA would have been motivated to place adjustable valve 78 in Palmer’s control unit enclosure 35 for added portability and/or organization. EUNSUNG-1003, [148].

Thus, Karasiuk-Palmer renders it obvious that the block (e.g., Palmer’s selector valve 20, liquid solution coupling and selector means 16, and/or control unit enclosure 35) is configured to control a flow of the first treatment fluid contained in the first container (e.g., Palmer’s reservoir 12₁) and the additional treatment fluid contained in the at least one additional container (e.g., Palmer’s reservoir 12₂) into the block with a valve (e.g., Palmer’s selector valve means 20 or Karasiuk’s adjustable valve 78) when the first container and the at least one additional container are connected to the console. EUNSUNG-1003, [149].

8. Claim 9

As discussed at [8], Karasiuk-Palmer renders it obvious that the system is configured to control a flow (e.g., using Palmer’s selector valve means 20 or Karasiuk’s adjustable valve 78) of the first treatment fluid contained in the first

container (e.g., Palmer's reservoir 12₁) to the handpiece (e.g., Karasiuk's device 10) through the block (e.g., Palmer's selector valve 20, liquid solution coupling and selector means 16, and/or control unit enclosure 35) when each of the first container and the handpiece is connected to the console. EUNSUNG-1003, [150]-[154].

9. Claim 10

As discussed at [8], Karasiuk-Palmer renders it obvious that the system is configured to separately control a flow (e.g., using Palmer's selector valve means 20 or Karasiuk's adjustable valve 78) of a second treatment fluid contained in the at least one additional container (e.g., Palmer's reservoir 12₂) to the handpiece (e.g., Karasiuk's device 10) through the block (e.g., Palmer's selector valve 20, liquid solution coupling and selector means 16, and/or control unit enclosure 35) when each of the first container, the at least one additional container, and the handpiece are connected to the console. EUNSUNG-1003, [155]-[158]. Thus, Karasiuk-Palmer renders this claim obvious based on Palmer's disclosure of separate control of different treatment fluids being delivered to the handpiece. *Id.*

To the extent that the term "separately" is interpreted to require a separate control mechanism for the second treatment fluid, Karasiuk's adjustable valve 78 acts as a separate control mechanism. EUNSUNG-1003, [156]; EUNSUNG-1004,

[0059]. When Palmer's selector valve 20 connects the handpiece to a first container (e.g., Palmer's reservoir 12₁), Karasiuk's adjustable valve 78 separately controls the flow of a first treatment solution in the first container, and when Palmer's selector valve 20 connects the handpiece to a second container (e.g., Palmer's reservoir 12₂), Karasiuk's adjustable valve 78 separately controls the flow of a second treatment solution in the second container. EUNSUNG-1003, [156].

Alternatively, to the extent Patent Owner argues that the claimed "block" requires a manifold and that Palmer does not disclose it (as discussed in [1.3] above), a POSITA would have found it obvious to use a manifold to implement Palmer's switching treatment fluids as a separate control for each treatment fluid. EUNSUNG-1003, [157]. As Mr. Simon explains, using a manifold for selecting between different treatment fluids with a separate control for each treatment fluid was well-known and would have been within a POSITA's general knowledge. EUNSUNG-1003, [157]-[158] (discussing EUNSUNG-1020, EUNSUNG-1009, EUNSUNG-1021, EUNSUNG-1023). Based on this general knowledge, a POSITA would have found it obvious to implement Palmer's functionality using a manifold for selecting between different treatment fluids by using a separate control for each treatment fluid. *Id.* Indeed, a POSITA would have viewed a manifold having a separate control for each treatment fluid as one of a finite number of op-

tions to achieve the functionality described by Palmer that would have been obvious to try. *Id.* A POSITA would have had a reasonable expectation of success to implement Palmer's switching between different fluids and providing a single fluid output using such a manifold, as it would have merely involved a simple substitution of one well-known element for another to obtain predictable results. *Id.*

10. Claim 11

[11.pre]

See [1.pre]. EUNSUNG-1003, [159].

[11.1]

As discussed for [1.1], Karasiuk-Palmer includes the ***console*** (e.g., Palmer's mobile cart 170) configured to receive a first container and at least one additional container. EUNSUNG-1005, FIGS. 2, 4, 11B; EUNSUNG-1003, [160], [164].

Further, Karasiuk-Palmer renders obvious the ***fluid control member***. EUNSUNG-1003, [161]-[165]. As discussed in [1.3], Karasiuk-Palmer's system includes "liquid solution coupling and selector means 16" including "selector valve means 20," which is housed in "control unit enclosure 35," that is connected to Palmer's solution reservoirs (***first*** and ***second containers***) and ***configured to be in fluid communication with*** the reservoirs. *Id.*

A POSITA would have understood and found obvious that Palmer's selector valve means 20, Palmer's liquid solution coupling and selector means 16, or Palmer's control unit enclosure 35 would constitute the ***fluid control member***.

EUNSUNG-1003, [162]. This aligns with the '287 patent's limited disclosure, which is silent as to the term "fluid control member" while allegedly describing a "manifold" or "manifold system" as having similar structure and functionality. EUNSUNG-1001, 5:28-30, Abstract; EUNSUNG-1003, [162]. As discussed in [1.3] above, Karasiuk-Palmer describes a manifold. EUNSUNG-1003, [107]-[109]; EUNSUNG-1005, 8: 22-9:16, FIG. 4.

Alternatively, to the extent Patent Owner argues that the "fluid control member" requires the use of a manifold and that Karasiuk-Palmer's system does not comprise a manifold, a POSITA would have found it obvious to use a manifold to implement the functionality of switching treatment fluids described by Palmer. EUNSUNG-1003, [163]; *see supra* [1.3] (discussion of the manifold).

Lastly, Palmer's control unit enclosure 35 (***fluid control member***), which includes the coupling and selector means 16 having the valve 20, is included in "mobile cart 170" (***console***). EUNSUNG-1003, [113]-[114]; EUNSUNG-1005, 9:58-10:16, 5:13-14, 4:53-68, 8:22-9:16, FIG. 11B; *supra* [1.3].

[11.2]

See [1.2]. EUNSUNG-1003, [166].

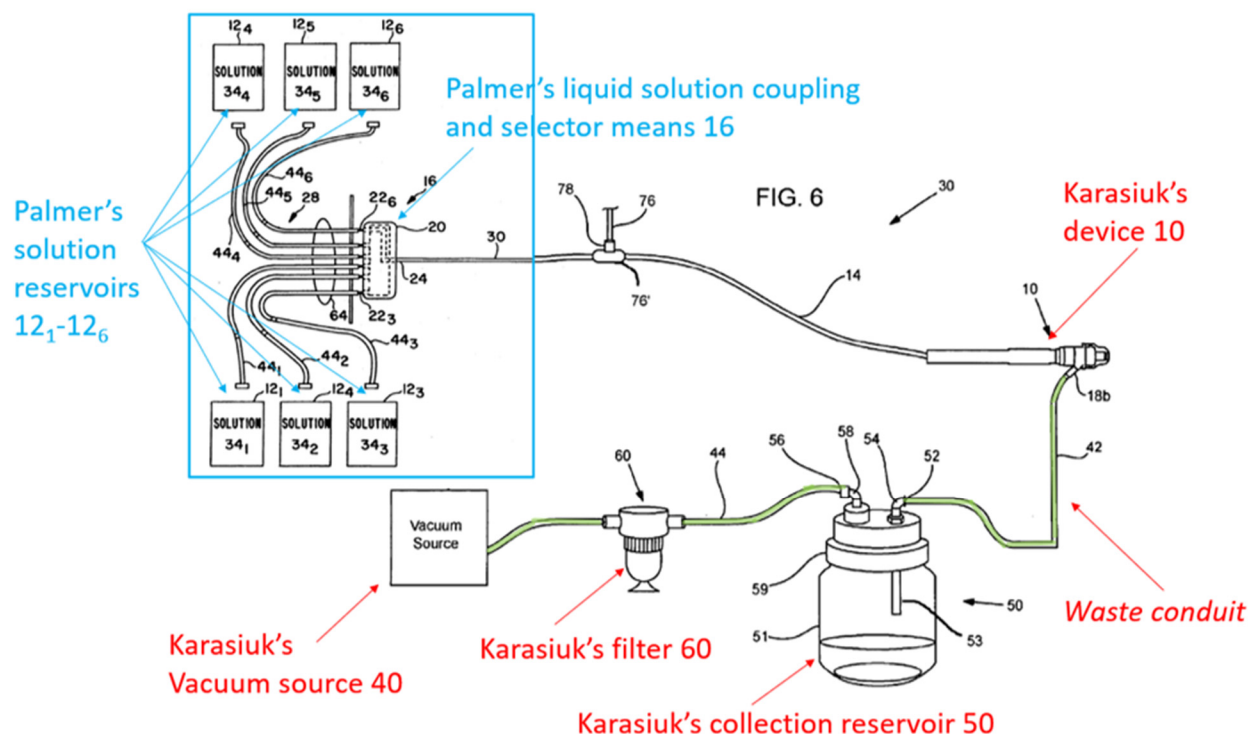
[11.3]

As discussed in [1.4] and [1.5], Karasiuk describes "vacuum source 40" and "collection reservoir 50" (***waste conduit***) for removing "waste materials (abraded

skin particles, and optionally, fluids).” EUNSUNG-1004, [0056], [0064]-[0066],

FIG. 6. As shown in Modified FIG. 6, Karasiuk’s collection reservoir 50 (*waste conduit*) is in fluid communication with device 10 (*handpiece assembly*) and vacuum source 40 (*vacuum source*). In addition, the *vacuum source* 40 and the device 10 (*handpiece assembly*) are in fluid communication with the collection reservoir 50 via “the vacuum line between device 10 and vacuum source 40” (*waste conduit*). EUNSUNG-1004, [0056]; EUNSUNG-1003, [167].

As discussed in [1.1], Karasiuk’s device 10 (*handpiece assembly*) is connected to Palmer’s “liquid solution coupling and selector means 16” (part of the *console*) via “tube 14.” EUNSUNG-1004, [0056], [0059], [0064], EUNSUNG-1003, [169]. Similarly, Karasiuk’s collection reservoir 50 and “the vacuum line between device 10 and vacuum source 40” (e.g., collectively vacuum line 42, second vacuum line 44, vacuum line 46) (*waste conduit*) are also connected to the *console*. EUNSUNG-1003, [168]-[169], [117]; §III.A.3.



Karasiuk, Modified FIG. 6

Further, Karasiuk’s handheld device 10 defines “opening or port 18b” for “connection of a vacuum source ... via a vacuum line” and to *move* “the exfoliated skin particles and any other waste that is removed through the microdermabrasion process” *away from* the handheld device. EUNSUNG-1004, [0054], [0066]; EUNSUNG-1003, [170].

[11.4]

As discussed in [11.1], Karasiuk-Palmer renders it obvious that when each of the first container (e.g., Palmer's reservoir 12₁) and the second container (e.g., Palmer's reservoir 12₂) are connected to the console (e.g., Palmer's wheeled cart

170), the fluid control member (e.g., Palmer's selector valve means 20, liquid solution coupling and selector means 16, or control unit enclosure 35) is configured to be in fluid communication with each of the first container and the second container. EUNSUNG-1003, [171]-[172]; *see also* [1.1], [1.3], [1.6], [1.8], [11.1].

[11.5]

As discussed in [1.5]-[1.6] and [11.3], Karasiuk-Palmer's *handpiece assembly* is connected to the *console* ([11.1]). EUNSUNG-1003, [173].

Further, Palmer discloses "a selector valve for fluidly coupling the handpiece to a selected one of the liquid solutions." Palmer, Abstract, FIG. 1, FIGS. 5A-5C. Specifically, Palmer's selector valve means 20 (*fluid control member*; [11.1]) is configured to select which one of reservoirs 12₁-12₆ is connected to the handpiece. EUNSUNG-1005, 8:6-21; EUNSUNG-1003, [174].

Accordingly, Karasiuk-Palmer renders it obvious that when the handpiece is connected to the console, the fluid control member (e.g., Palmer's selector valve means 20, liquid solution coupling and selector means 16 having the valve means 20, or control unit enclosure 35 housing the selector means 16) is configured to be in fluid communication with the handpiece. EUNSUNG-1003, [175].

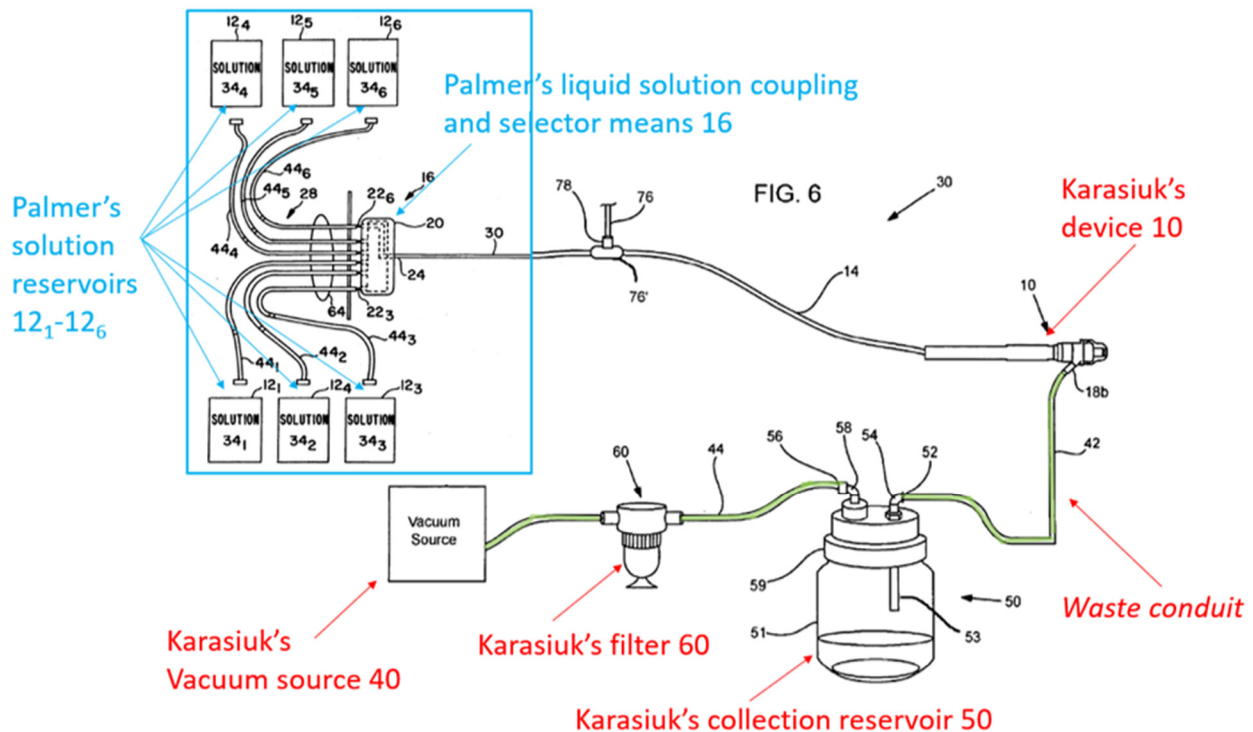
[11.6]

See [1.1], [1.3], [1.5]-[1.6], [1.8], [11.1], [11.3]-[11.5] as to (i) each of the first and second containers containing treatment material, (ii) the first and second

containers being connected to the console, and (iii) the handpiece assembly being connected to the console. EUNSUNG-1003, [176].

As discussed in §III.A.3, Karasiuk-Palmer replaces Karasiuk's reservoir 70 with Palmer's multiple reservoirs and "liquid solution coupling and selector means 16" to allow selection of different treatment solutions. EUNSUNG-1003, [177].

Karasiuk discloses that 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].



Karasiuk, Modified FIG. 6

As discussed in §III.A.3, it would have been obvious that Karasiuk's *vacuum source* 40 is connected to collection reservoir 50 and device 10 (*handpiece*

assembly) to remove waste/debris as well as to pump treatment solutions from Palmer's fluid containers. EUNSUNG-1003, [178]; EUNSUNG-1004, [0020], FIG. 6. As discussed in [11.3] above, Karasiuk's handheld device 10 defines "opening or port 18b" for "connection of a vacuum source ... via a vacuum line" and to remove "the exfoliated skin particles and any other waste" from the handheld device. EUNSUNG-1004, [0054], [0066], [0047], FIG. 1A. Thus, a POSITA would have understood and found obvious that Karasiuk-Palmer's system is configured to create a vacuum along a distal end (e.g., Karasiuk's treatment tip 20) of the handpiece assembly using the vacuum source (e.g., Karasiuk's vacuum source 40) to selectively draw treatment material from the first container or the second container to the handpiece. EUNSUNG-1003, [178]-[181].

11. Claim 12

The limitations of claim 12 are substantially the same as [1.8], and the analysis of [1.8] similarly applies here. EUNSUNG-1003, [182]-[184].

12. Claim 14

See [1.4]. EUNSUNG-1003, [185].

13. Claim 15

See [1.1], [1.3], [1.6]-[1.8]. As discussed in [1.8], for example, Karasiuk-Palmer's system is configured to deliver different treatment materials contained in respective containers to the handpiece sequentially. EUNSUNG-1005, 6:46-51,

11:9-12. Thus, a POSITA would have recognized that when Palmer’s liquid solution coupling and selector means 16 connects the handpiece to a first container, the system is configured to deliver a single treatment material from the first container to a patient’s skin. EUNSUNG-1003, [186]. Further, to the extent that a user only needs to be treated with one treatment solution from a first container, a POSITA would have used Palmer’s liquid solution coupling and selector means 16 to connect the handpiece to the first container, so that the system delivers a single treatment material from the first container to a patient’s skin. EUNSUNG-1003, [187]-[188].

14. Claim 16

The Karasiuk-Palmer system “pertains to dermatology, more particularly to *skin* treatment and conditioning.” EUNSUNG-1004, [0002], [0047], [0059]. Thus, it would have been obvious that Karasiuk-Palmer’s treatment material is a skin treatment fluid. EUNSUNG-1003, [189]; *supra* §III.A.3, [1.6], [1.8].

15. Claim 22

[22.pre]

See [1.pre]. EUNSUNG-1003, [190].

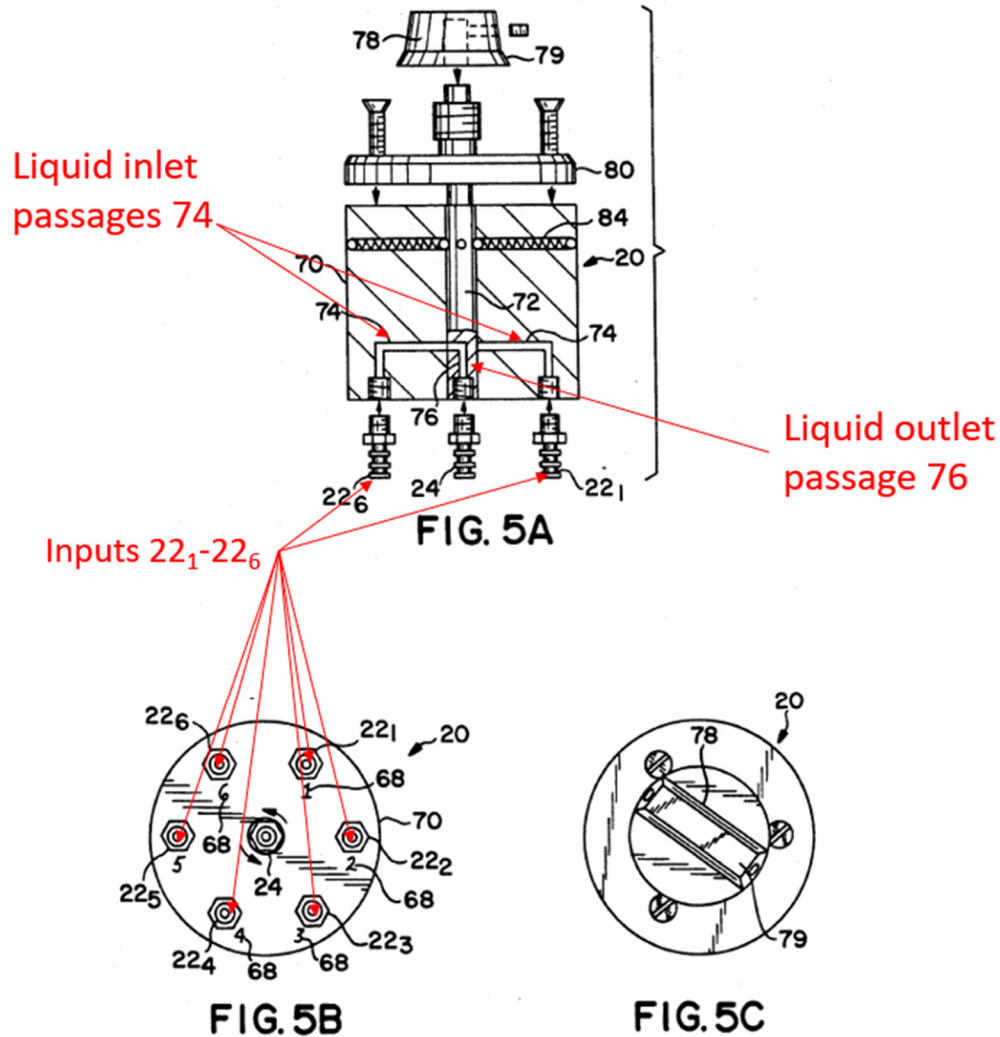
[22.1]

See [1.1], [1.6]. EUNSUNG-1003, [191].

[22.2]

As discussed at [1.3], Karasiuk-Palmer renders obvious a block (e.g.,

Palmer's selector valve means 20) that is configured to selectively be in fluid communication with the first and additional containers when the first and at least one additional containers are connected to the console. EUNSUNG-1003, [192]-[193]. A POSITA would have understood and found obvious that this block has one or more passages or spaces (*collection lumen*), such as Palmer's outlet passage 76, which is configured to selectively be in fluid communication with the first container and the additional container. EUNSUNG-1005, Abstract, 5:1-9, 8:6-53, FIGS. 1, 5A-5C; EUNSUNG-1003, [192]-[194].



Palmer, FIGS. 5A-5C

Alternatively or additionally, a POSITA would have understood and found obvious that other fluid passages and spaces defined in Karasiuk-Palmer would constitute the *collection lumen*. EUNSUNG-1003, [195]. For example, as Mr. Simon explains, a passage/space within one or more of (1) Palmer's output 24, (2) Palmer's second tubing means 30, (3) Karasiuk's tube 14, and (4) Karasiuk's de-

vice 10 (e.g., Karasiuk's cannula 16) would constitute a ***collection lumen***. EUNSUNG-1003, [195], [197]-[200]; EUNSUNG-1004, [0044]-[0045], [0048], [0054], [0059], [0064], FIGS. 1A-1B, 6; EUNSUNG-1005, 5:1-9, 9:1-6, FIGS. 1, 4. This aligns with the '287 patent's disclosure of "lumen" 90, 92 in handpiece assembly 18. EUNSUNG-1001, 7:65-8:12; EUNSUNG-1003, [195].

Further, as discussed in [1.3], even assuming that a manifold is required for claim 22, a POSITA would have found it obvious to use a manifold having a collection lumen to implement Palmer's switching treatment fluids. EUNSUNG-1003, [196]. As Mr. Simon explains, a manifold was well-known for including a tube or channel (***collection lumen***) for selectively flowing different treatment fluids. EUNSUNG-1003, [196]-[200] (discussing EUNSUNG-1020, EUNSUNG-1009, EUNSUNG-1021, EUNSUNG-1023).

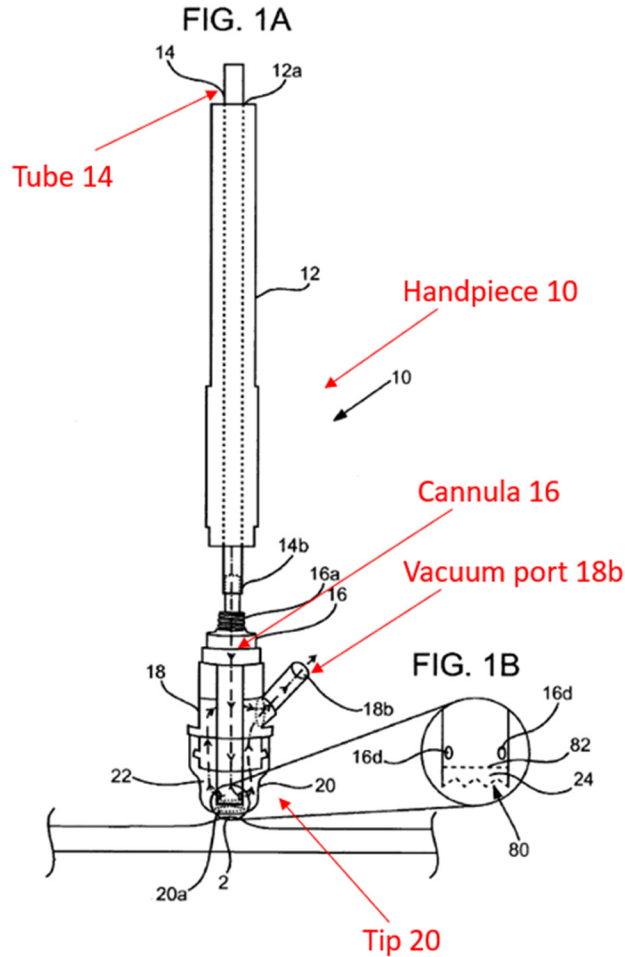
[22.3]

Karasiuk-Palmer renders obvious a handpiece (e.g., Karasiuk's device 10) having a working end (e.g., Karasiuk's treatment tip 20), the working end of the handpiece being configured to contact skin tissue of a subject during use. EUNSUNG-1003, [201]-[204]; EUNSUNG-1004, [0044], [0047] ("A treatment tip 20 ... is smooth surfaced and adapted to glide over the skin surface for application of lotions/vitamins or other fluids thereto during processing"), [0063], FIGS. 1A-1B; *supra* [1.2].

[22.4]

See [1.4]-[1.7], [22.2]-[22.3] as to the working end of the handpiece being in fluid communication with a vacuum source, and the handpiece being connected to the console. EUNSUNG-1003, [205].

As discussed in [11.6], Karasiuk-Palmer's *vacuum source* 40 is connected to the handheld device 10 (*handpiece*) and configured to, when activated, pump treatment solutions from the containers to the handpiece and remove waste/debris by creating a vacuum (*suction force*) along the device's tip 20 (*distal end* or *working end of the handpiece*). EUNSUNG-1004, [0054], [0066], [0047], FIGS. 1A-1B (illustrating cannula 16 connected to vacuum source 40 via vacuum port 18b). Further, Karasiuk's "device 10 is positioned so as to place tip 20 in contact with the skin surface to be microabraded and the vacuum source is turned on to establish a vacuum within the system 30." EUNSUNG-1004, [0063]. "Upon forming the vacuum loop as described above, the fluid contents in fluid reservoir 70 are drawn through tube 14 and into device 10 where they flow out of the cannula 16 through openings 16d and are applied to the skin." EUNSUNG-1004, [0064]; EUNSUNG-1003, [205]-[207].



Karasiuk, FIGS. 1A-1B

Further, Karasiuk-Palmer's *collection lumen* (e.g., a passage/space within selector valve means 20 or handpiece 10; *see* [22.2]) is fluidly connected to the working end of the handpiece, as illustrated in Modified FIG. 6. EUNSUNG-1005, Abstract, 5:1-9, 8:6-53, FIG. 1, FIGS. 5A-5C; EUNSUNG-1003, [208]. As discussed for [22.2], Karasiuk-Palmer's *collection lumen* (e.g., Palmer's outlet passage 76 or Karasiuk's cannula 16) is in fluid communication with the first and additional containers. Thus, it would have been understood and obvious that, in

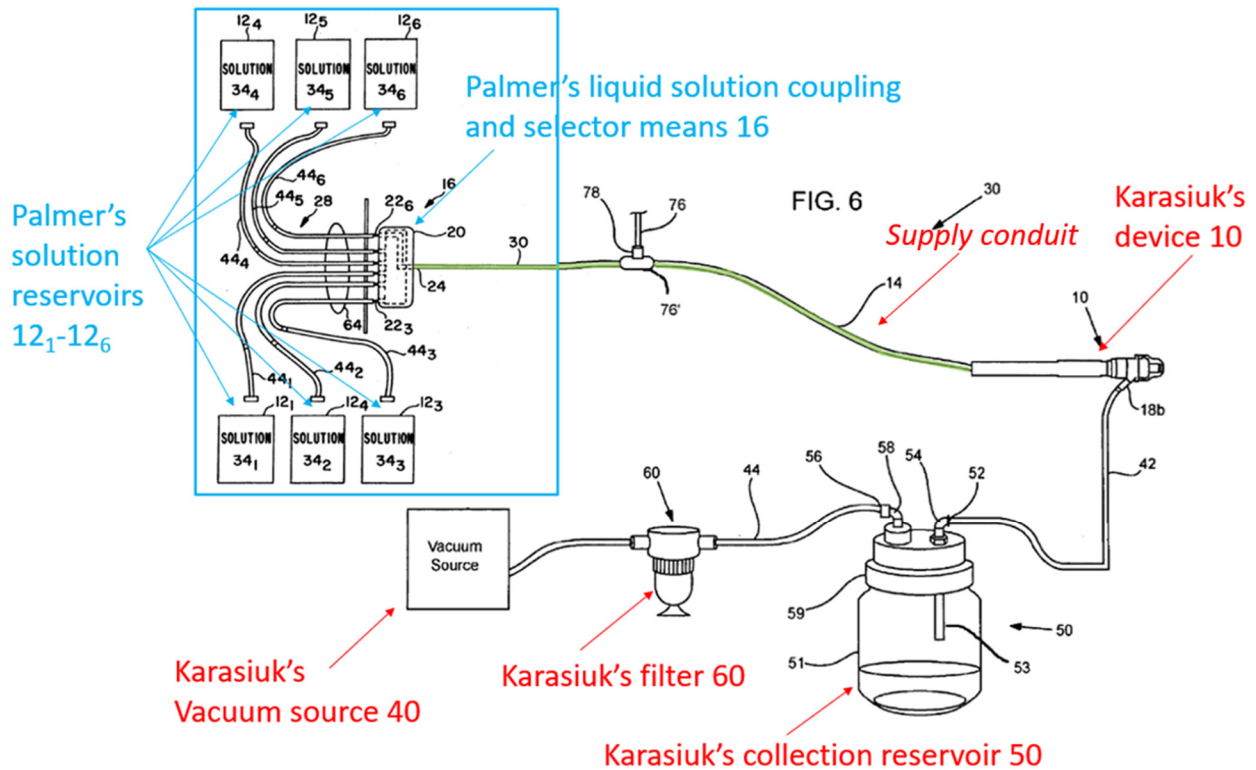
Karasiuk-Palmer, the working end of the handpiece is in fluid communication with the first or additional container through the collection lumen. EUNSUNG-1003, [205]-[209].

[22.5]

As discussed in [22.2] and [22.4], Karasiuk-Palmer's **collection lumen** (e.g., Palmer's outlet passage 76 or Karasiuk's cannula 16) is fluidly connected to the working end of the handheld device 10. EUNSUNG-1003, [210].

As shown in [22.2], Karasiuk-Palmer's cannula 16 (**collection lumen**) defined in the handheld device 10 is fluid communication with the treatment tip 20 (**working end**) of the handheld device 10 via passageway 16c and opening 16d (**supply conduit**). EUNSUNG-1004, FIGS.1A-1B, [0048], [0053], [0054], [0064]; EUNSUNG-1003, [210]-[212].

Additionally, as discussed in [22.2] and illustrated in Modified FIG. 6 below, Karasiuk-Palmer's outlet passage 76 (**collection lumen**) defined in the valve means 20 ([22.2]) is fluid communication with the working end of the handheld device 10 via a **supply conduit** (annotated in green). EUNSUNG-1003, [213]-[214].



Karasiuk, Modified FIG. 6

[22.6]

See [1.1], [1.6], [1.8]. EUNSUNG-1003, [215]-[216].

16. Claim 23

[23.1]

See [1.4]. EUNSUNG-1003, [217].

[23.2]

See [1.6] as to the handpiece and the waste container being connected to the console. See [1.7] and [11.3] as to the handpiece being in fluid communication with the vacuum source and a waste container through a waste conduit (i.e., “second conduit” in [1.7]). EUNSUNG-1003, [218]-[220].

[23.3]

See [1.1], [1.3], [1.6], [1.8]. EUNSUNG-1003, [221]-[222]. Notably, a POSITA would have found it obvious to configure Karasiuk-Palmer to achieve sequential or simultaneous delivery of treatment fluids from the first container and at least one additional container. *Id.*, [222].

17. Claim 26

[26.pre]-[26.5]

See [1.pre]-[1.5]. EUNSUNG-1003, [223]-[228].

[26.6]-[26.7]

See [2]-[3]. EUNSUNG-1003, [229]-[233].

18. Claim 28

[28.1]

See [1.4]. EUNSUNG-1003, [234].

[28.2]

See [1.1], [1.5]-[1.7], [11.3], [23]. EUNSUNG-1003, [235].

19. Claim 29

See [1.8], [1.1], [1.3], [1.5]-[1.6], [8]. EUNSUNG-1003, [236].

20. Claim 34

See [8], [1.1], [1.3], [1.6], [1.8]. EUNSUNG-1003, [237].

21. Claim 35

See [9]. EUNSUNG-1003, [238].

22. Claim 36

See [10]. EUNSUNG-1003, [239].

23. Claim 37

[37.pre]-[37.5]

See [1.pre]-[1.5]. EUNSUNG-1003, [240]-[246].

[37.6]- [37.7]

See [9]-[10]. EUNSUNG-1003, [247]-[248].

24. Claim 39

[39.1]

See [1.4]. EUNSUNG-1003, [249].

[39.2]

See [1.5]-[1.7], [28.2], [11.3], [23]. EUNSUNG-1003, [250].

25. Claim 40

See [1.8], [1.1], [1.3], [1.5]-[1.6], [8], [29]. EUNSUNG-1003, [251].

26. Claim 45

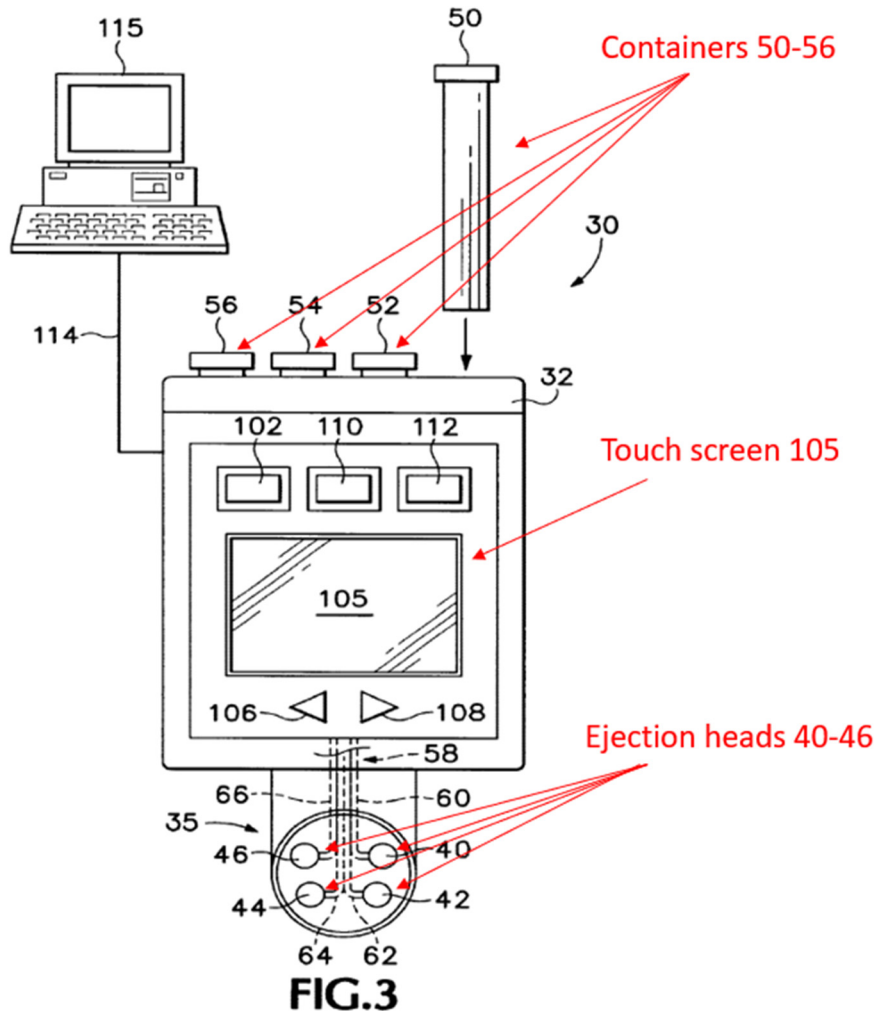
See [8], [1.1], [1.3], [1.6], [1.8], [23.3], [34]. EUNSUNG-1003, [252].

B. [GROUND 1B]: Karasiuk-Palmer-Trueba

1. Trueba

Similar to Karasiuk and Palmer, Trueba discloses a fluid delivery system including multiple containers 50-56 and pump means (e.g., ejection heads 40-46).

EUNSUNG-1008, Abstract, 8:49-11:3, FIG. 3. EUNSUNG-1003, [60]-[64].



Trueba, FIG. 3

Trueba's fluid delivery is controlled by a computer (e.g., controller 100) linked to a user input (e.g., external computer 115 or touch screen 105). EUN-
SUNG-1003, [61]. For example, "[c]ontroller 100 operates to apply firing signals
to the ejection heads 40-46, which respond by ejecting fluid from reservoirs 50-
56." EUNSUNG-1008, 10:60-62. Touch screen 105 includes "a series of images
that, when touched with a finger or stylus, program the controller 100" and select a
particular drug or dosage. EUNSUNG-1008, 11:42-12:8, FIG. 3.

Using this computer control, multiple compositions can be automatically dispensed simultaneously or sequentially. EUNSUNG-1008, 3:4-8, 5:18-6:9, 6:10-16, 11:4-34; EUNSUNG-1003, [62]-[63]. Trueba's device can be programmed to respond to changing clinical circumstances. EUNSUNG-1008, 11:15-20; EUNSUNG-1003, [64]. Further, the device can be programmed to "prevent unauthorized alteration of dosages" and "permit certain ranges of dosages to be administered." EUNSUNG-1008, 12:2-9; EUNSUNG-1003, [64].

2. Karasiuk-Palmer-Trueba Combination

In the Karasiuk-Palmer-Trueba combination ("Karasiuk-Palmer-Trueba"), Karasiuk-Palmer's system would have been modified based on Trueba's teachings of computer control and display. EUNSUNG-1003, [253]-[268]. For example, in the resulting system, Karasiuk-Palmer's selector means (e.g. Palmer's selector valve 20) would be controlled by a computer (e.g., Trueba's controller 100), which is controlled by a user input (e.g., Trueba's touch screen 105), to control the flow of treatment solutions from containers (e.g., Palmer's reservoirs 12₁-12₆), so that a user can use the user input device to select a flow of fluids from the containers. EUNSUNG-1003, [253]. The combined device also includes a display (e.g., Trueba's touch screen 105) that indicates which solution is being delivered. *Id.*

A POSITA would have been motivated to modify Karasiuk-Palmer's system by including Trueba's computer control and display for several benefits, such as

added precision, automation, and clarity. EUNSUNG-1003, [254]-[268].

First, in the combination, Trueba would allow programming delivery of different treatment materials at different times and thus allow automated delivery following complex administration protocols. EUNSUNG-1008, 3:34-38, 4:65-5:17, 6:1-9, 6:27-7:9, 10:52-11:49, FIG. 1; EUNSUNG-1003, [255].

Second, Trueba's techniques offer additional benefits in that "[c]omputerized control of medication dosing, which may be programmed by medical personnel for subsequent automated delivery, can help avoid toxic drug interactions, overdoses, and death." EUNSUNG-1008, 6:1-9, 12:2-5; EUNSUNG-1003, [256].

Third, the combination would benefit from Trueba's touch screen that shows "a series of images that, when touched with a finger or stylus, program the controller 100" and that "indicate[s] which selections have been made" and displays "information such as desired dosages, frequency, and potential side effects." EUNSUNG-1008, 11:42-12:8, FIG. 3; EUNSUNG-1003, [257], [264] (citing EUNSUNG-1014).

A POSITA would have had a reasonable expectation of success in implementing the combination given the technical similarities between Karasiuk, Palmer, and Trueba. EUNSUNG-1003, [258]. Trueba's system is similar to Karasiuk's, including treatments "for topical application of a bioactive composition to the surface of the subject, such as a patch of skin." EUNSUNG-1008, 3:22-

27; EUNSUNG-1003, [258]. Trueba also discloses a system similar to Palmer's by selecting from different treatment materials from different containers. EUNSUNG-1008, 3:4-8, 5:14-26, 11:4-34, FIG. 3; EUNSUNG-1003, [258].

Further, Karasiuk-Palmer-Trueba would merely constitute the use of a known technique to improve similar devices in the same way. EUNSUNG-1003, [265]. Indeed, by the Critical Date, computer (e.g., PLC) controlled fluid delivery systems were well-known. EUNSUNG-1003, [264]-[268]; EUNSUNG-1007, FIG. 3; EUNSUNG-1008, 11:4-34, FIG. 3; EUNSUNG-1015, Abstract. The modification requires nothing more than automating the manual process in Karasiuk-Palmer with well-known automation techniques. EUNSUNG-1003, [264]-[268] (discussing EUNSUNG-1010, EUNSUNG-1006, EUNSUNG-1011).

3. Claims 1, 12, 22, 23, 29, 40 and Dependent Claims

As discussed in §III.A, Karasiuk-Palmer-Trueba renders obvious claims 1, 12, 22, 23, 29, and 40 for the same reasons as discussed regarding Karasiuk-Palmer. EUNSUNG-1003, [269], [277].

Karasiuk-Palmer-Trueba further renders obvious [1.8], [12], [22.6], [23.3], [29] and [40] based on Trueba's teachings. To the extent that the term "sequentially" is interpreted to require automatic switching between first and second treatment fluids, Karasiuk-Palmer-Trueba renders this limitation obvious. EUNSUNG-1003, [270], [277]; EUNSUNG-1008, 3:4-8, 5:18-6:9, 6:10-16, 11:4-34, 12:2-9. As

discussed in §III.B.2, Karasiuk-Palmer-Trueba's system employs "[c]omputerized control of medication dosing, which may be programmed by medical personnel **for subsequent automated delivery**," as taught by Trueba. EUNSUNG-1008, 6:6-9; EUNSUNG-1003, [271]. A POSITA would have found it obvious to employ Trueba's automation in the system of Karasiuk-Palmer to provide added precision (avoiding human error), automation, and clarity, resulting in automatic switching and delivery of treatment fluids in a sequential manner. EUNSUNG-1003, [272]-[276]; *In re Venner*, 262 F.2d 91, 95 (CCPA 1958) (broadly providing an automatic or mechanical means to replace a manual activity which accomplished the same result is not sufficient to distinguish over the prior art). Similarly, dependent claims 2-10 and 24-25 that inherit the same subject matter are rendered obvious by Karasiuk-Palmer-Trueba.

4. Claims 3, 26 and Dependent Claims

As discussed in §III.A, Karasiuk-Palmer-Trueba renders obvious claims 3 and 26 for the same reasons as discussed regarding Karasiuk-Palmer. EUNSUNG-1003, [278].

Karasiuk-Palmer-Trueba further renders obvious [3] and [26.7] based on Trueba's teachings. EUNSUNG-1003, [278]. As discussed regarding [1.8] above, to the extent that the term "one at a time" is interpreted to require automatic

switching between first and second treatment fluids, Karasiuk-Palmer-Trueba renders this limitation obvious. *Id.* EUNSUNG-1008, 3:4-8, 5:18-6:16, 11:4-34, 12:2-9. Similarly, dependent claims 28-36 that inherit the same subject matter are rendered obvious by Karasiuk-Palmer-Trueba.

5. Claims 4, 17, 24, 30, 41

As discussed in §III.B.2, Karasiuk-Palmer-Trueba includes a computing device (e.g., Trueba controller 100) configured to control at least one function (e.g., delivery of fluids). EUNSUNG-1003, [279], [284], [288], [290], [294]; EUNSUNG-1008, 3:34-38, 4:65-5:17, 6:1-9, 6:27-7:9, 10:52-11:49, 12:2-5, FIG. 1.

6. Claims 5, 31, 42

As discussed in §III.B.2, Karasiuk-Palmer-Trueba includes a user input device (e.g., Trueba's touch screen 105) to select a flow of fluids from containers to the handpiece. EUNSUNG-1003, [280], [291], [295]; EUNSUNG-1008, 11:40-12:8, FIG. 3.

7. Claims 6, 19, 32, 43

As discussed in §III.B.2, Karasiuk-Palmer-Trueba's user input device includes a touch screen. EUNSUNG-1003, [281], [286], [292], [296]; EUNSUNG-1008, 11:40-12:8, FIG. 3.

8. Claims 7, 20, 33, 44

As discussed in §III.B.2, Karasiuk-Palmer-Trueba's system includes a display indicating which solution is being delivered. EUNSUNG-1003, [282], [287],

[293], [297]; EUNSUNG-1008, 11:40-12:8, FIG. 3.

If an additional display is required separate from the touch screen, Trueba discloses coupling external computer 115 to controller 100. EUNSUNG-1008, 12:9-36, FIG. 3; EUNSUNG-1003, [283]. A POSITA would have understood and found obvious that this external computer 115 would include an additional display separate from Trueba's touch screen 105. EUNSUNG-1003, [283].

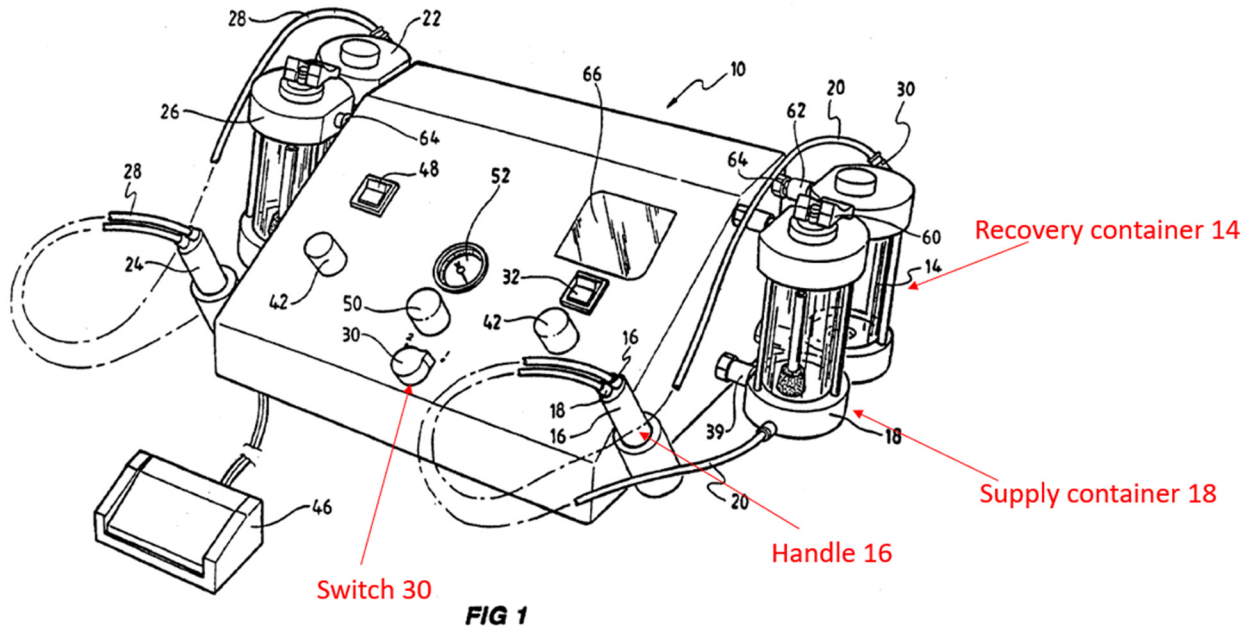
9. Claims 18, 25

Similar to [5], Karasiuk-Palmer-Trueba's apparatus includes a user input device to facilitate control of a flow of fluids or treatment materials from the containers to the handpiece assembly. EUNSUNG-1003, [285], [289]; EUNSUNG-1008, 11:40-12:8, FIG. 3.

C. [GROUND 2A]: Greenberg

1. Greenberg

Greenberg describes a system for conducting microdermabrasion procedures using a handpiece (e.g., hand tool 16) to apply treatment materials to a targeted area of skin. EUNSUNG-1006, Abstract, [0049]-[0064], FIG. 1; EUNSUNG-1003, [65]-[70].



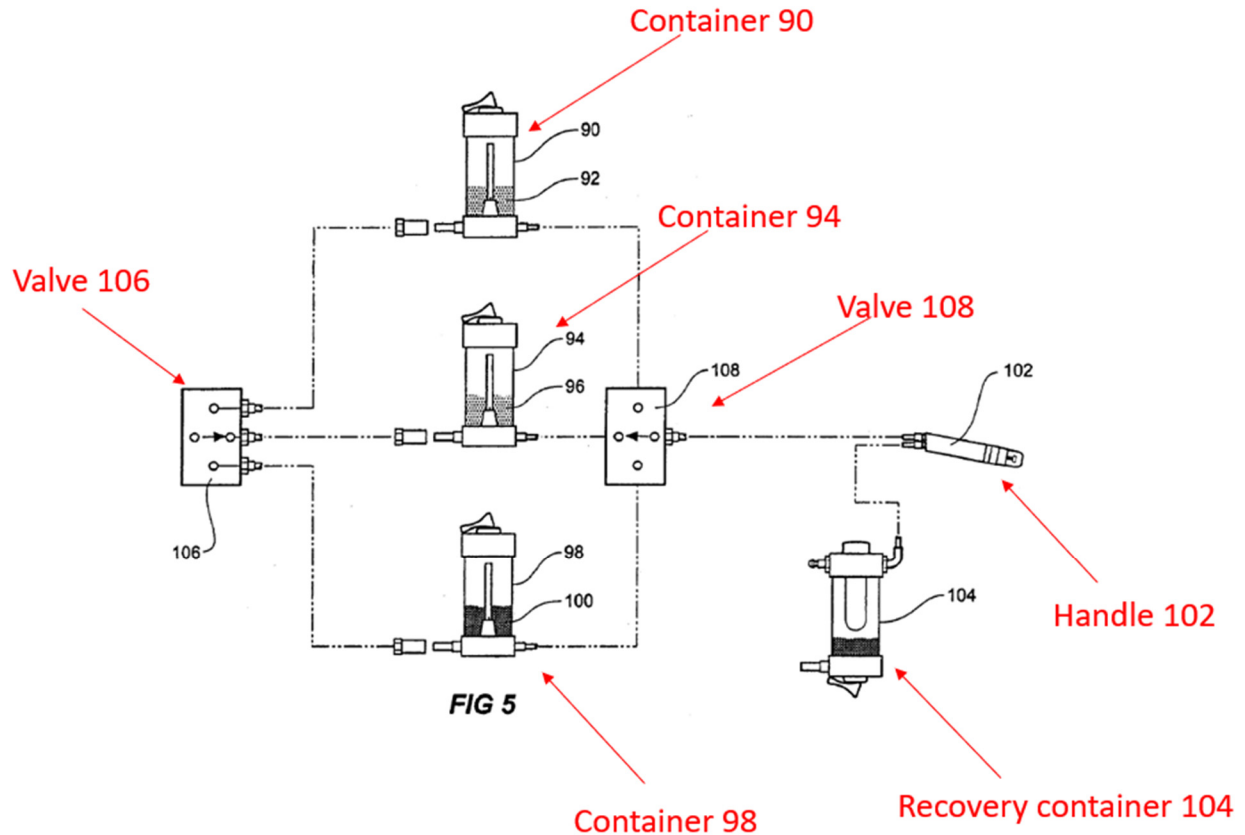
Greenberg, FIG. 1

Greenberg's system includes: (1) "a pneumatic source operatively connected to a recovery container and to a hand tool"; (2) "a plurality of supply containers including particulates"; (3) "a valve selectively connecting said pneumatic source, recovery container and hand tool to a selected one of said supply containers."

EUNSUNG-1006, [0013]-[0016]; EUNSUNG-1003, [66]. In operation, the pneumatic source, such as "vacuum pump," "provides for an air flow through the recovery container, hand tool and the selected supply container in communication with same, drawing said 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 so located that particles passing through said hand tool are caused to impinge on the surface thereby treating it." EUNSUNG-1006, [0017],

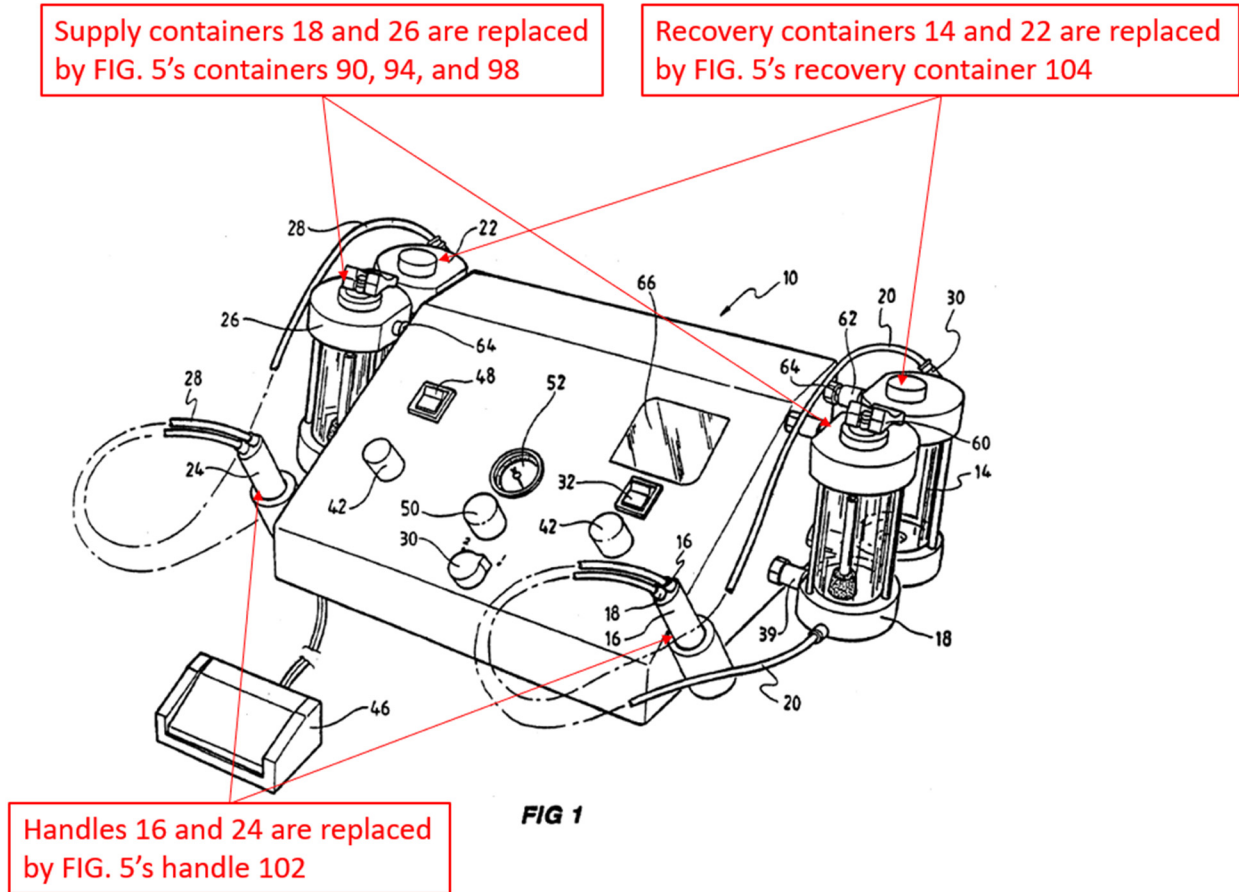
[0026], [0004], [0049]-[0059], [0066], FIG. 3; EUNSUNG-1003, [66].

Greenberg's system allows "a choice of different particles to use in a micro-dermabrasion machine," "with a plurality of supply containers housing different particles." EUNSUNG-1006, [0073]-[0077]; EUNSUNG-1003, [67]. In FIG. 5, Greenberg's device includes three supply containers (e.g., containers 90, 94, and 98), and valves 106 and 108 control which container is connected to handpiece 102 and recovery container 104. EUNSUNG-1006, [0077]; EUNSUNG-1003, [67]. In operation, "[a] supply container can be chosen to be in communication with handle 102 and recovery container 104 by the use of valve 106 that controls air flow into the respective supply container and valve 108 that th[e]n connects that supply container to the handle 102 and recovery container 104." *Id.*



Greenberg, FIG. 5

As recognized in Greenberg and also noted by Mr. Simon, FIG. 5's implementation would have been readily incorporated into FIG. 1's apparatus. EUNSUNG-1003, [68]; EUNSUNG-1006, [0077] ("This can be achieved in **the present apparatus** by having an apparatus with a plurality of supply containers"). For example, as shown in FIG. 1, (1) FIG. 5's containers 90, 94, 98 and valves 106, 108 would be used instead of FIG. 1's supply containers 18 and 26; (2) FIG. 5's recovery container 104 would be used for FIG. 1's recovery containers 14 and 22, and (3) FIG. 5's single handle 102 would replace FIG. 1's two handles 16 and 24. EUNSUNG-1003, [68].



Greenberg, FIG. 1

Further, to connect multiple containers 90, 94, 98 with single handle 102, FIG. 5's control valves (e.g., valves 106 and 108) are used to enable selective fluid communication with each of the containers. EUNSUNG-1003, [68]. As Mr. Simon describes, other structures described with respect to FIGS. 1-4 would have been similarly applicable for the FIG. 5 implementation. *Id.* Further, each of FIG. 5's containers 90, 94, 98, 104 would have been connected to FIG. 1's apparatus 10 in the same manner as FIG. 1's containers 14, 18, 22, 26. EUNSUNG-1006, [0053],

[0062], FIG. 1; EUNSUNG-1003, [68]. The same mechanism and operation described for FIG. 1 would have been used for FIG. 5's implementation. EUNSUNG-1003, [68].

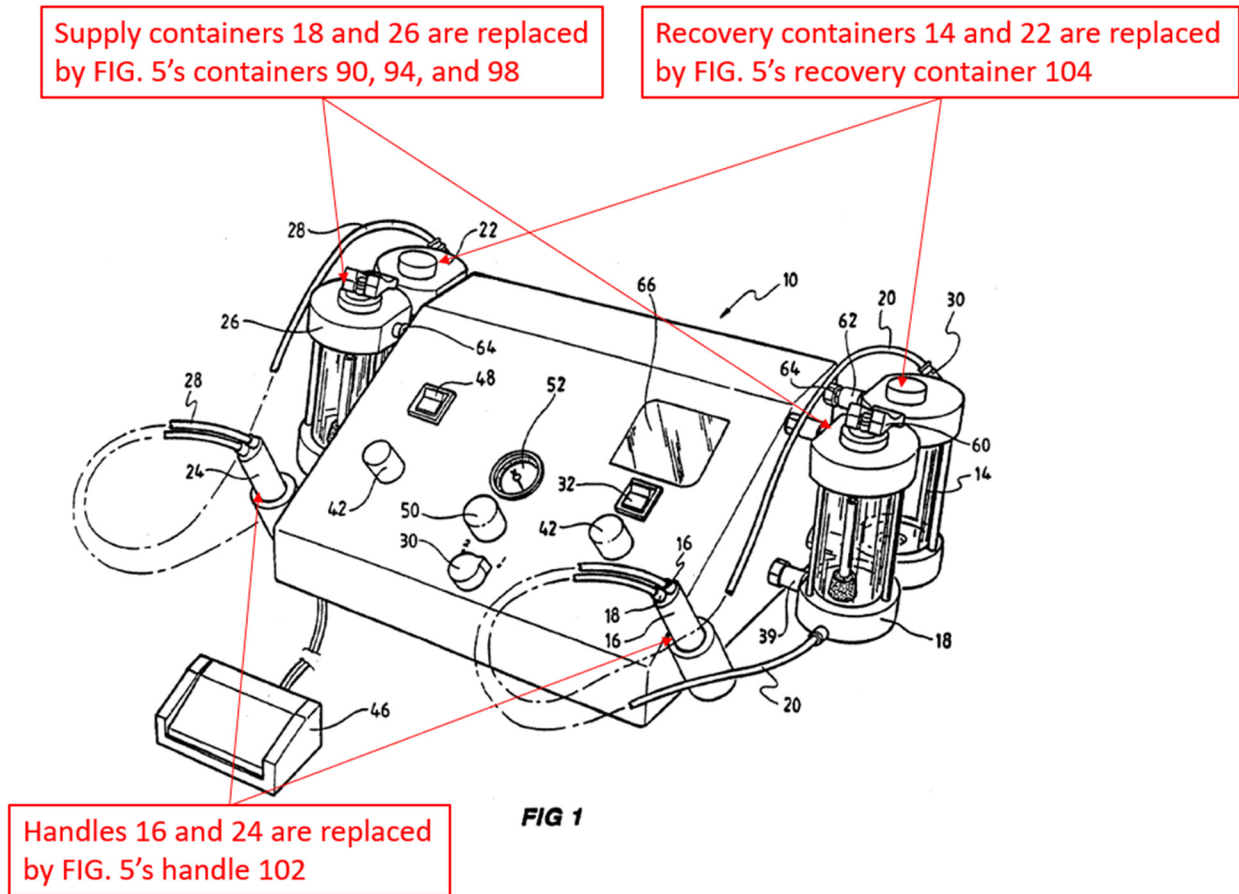
2. Claim 1

[1.pre]

To the extent the preamble is limiting, Greenberg describes “[a] microabrasion apparatus for providing treatment of skin or other surfaces.” EUNSUNG-1006, Abstract, FIGS. 1, 3; EUNSUNG-1003, [298].

[1.1]

Greenberg describes the *console* by its “apparatus 10.” EUNSUNG-1003, [299]-[306]. As shown in FIG. 1, Greenberg's apparatus 10 is designed to receive and connect the containers and handles, and enclose components within the apparatus, allowing the user to control fluid flow via switches (e.g., switch 30). EUNSUNG-1006, [0049]-[0064]; *supra* §III.C.1; EUNSUNG-1003, [299]. Thus, a POSITA would have recognized and found obvious that Greenberg's apparatus corresponds to a *console* that receives multiple containers. EUNSUNG-1003, [299]. This aligns with the '287 patent's disclosure of a console that receives/connects multiple containers, a valve, a handpiece, a vacuum pump, and other various components. EUNSUNG-1003, [299].



Greenberg, FIG. 1

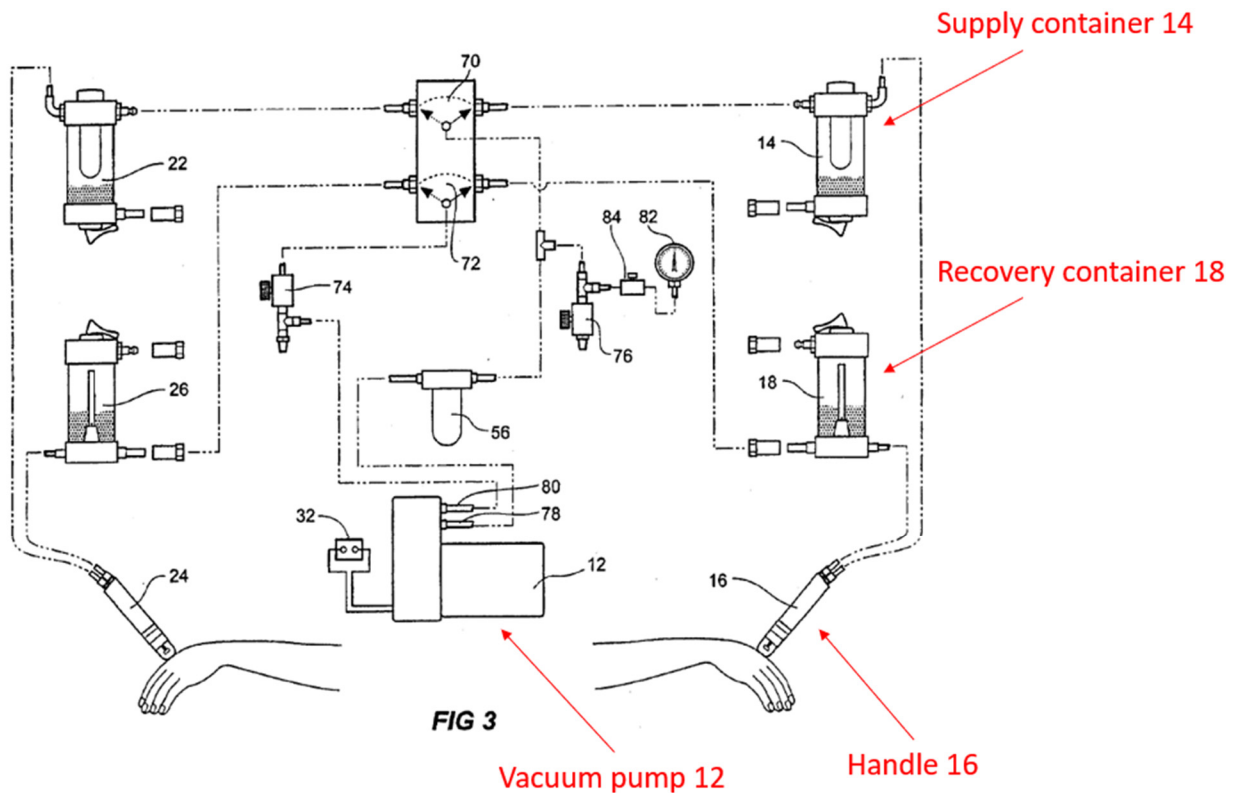
To the extent Patent Owner argues that Greenberg's apparatus does not include a console, a POSITA would have been motivated and found it obvious to place components of Greenberg's apparatus in a console for increased portability and/or organization. EUNSUNG-1003, [300]. As Mr. Simon explains, using a console to house similar medical devices was well-known and would have been within a POSITA's general knowledge. EUNSUNG-1003, [300]-[304] (discussing EUNSUNG-1010, EUNSUNG-1005, EUNSUNG-1011, EUNSUNG-1020). Indeed, a POSITA would have viewed a console as one of a finite number of options to

achieve increased portability and/or organization that would have been obvious to try. *Id.* A POSITA would have had a reasonable expectation of success to place Greenberg's apparatus in a console, as it would constitute the use of a known technique to improve similar devices in the same way. *Id.*

As discussed in §III.C.1, Greenberg describes at least three supply containers in the apparatus, which would have been understood as a ***first container*** (e.g., container 90) and ***at least one additional container*** (e.g., containers 94, 98) received at the console. EUNSUNG-1003, [305]-[306]; EUNSUNG-1006, [0077], FIG. 1.

[1.2]

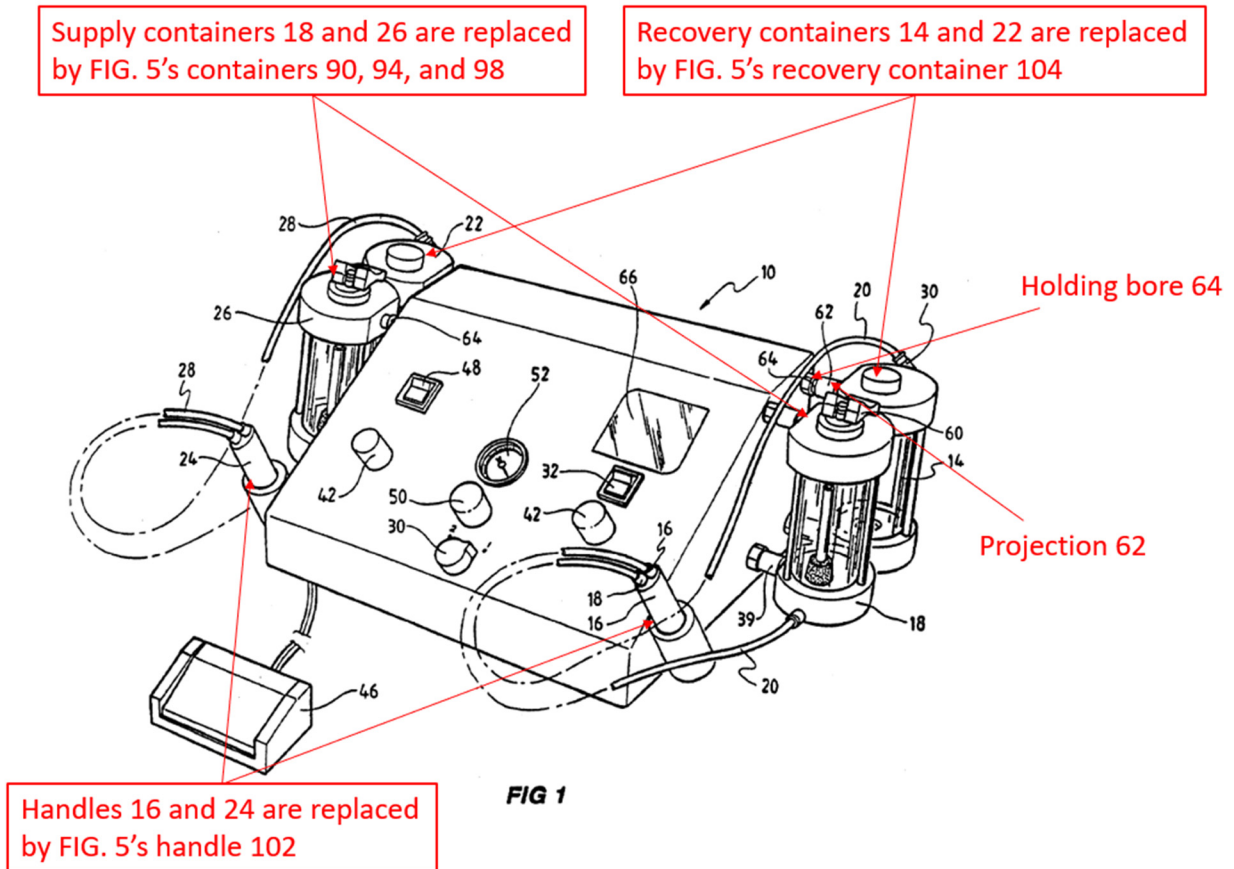
Greenberg describes “handle 16” (FIG. 1) and “handle 102” (FIG. 5) that are configured to contact skin tissue of a subject. EUNSUNG-1006, [0066], [0077], FIG. 3; EUNSUNG-1003, [307]-[308].



Greenberg, FIG. 3

[1.3]

As shown in FIG. 1, Greenberg's supply containers 90, 94, 98 (*first and at least one additional containers; see [1.1]*) are connected to apparatus 10 (*console*). EUNSUNG-1006, [0053], [0062]; EUNSUNG-1003, [309]-[311]; *supra* §III.C.1. Greenberg's containers are fluidly connected to various components (e.g., vacuum pump 12, switch 30, valve 54) enclosed in apparatus 10, as shown in FIGS. 2-4. EUNSUNG-1006, [0049]-[0057]; EUNSUNG-1003, [309]-[311].

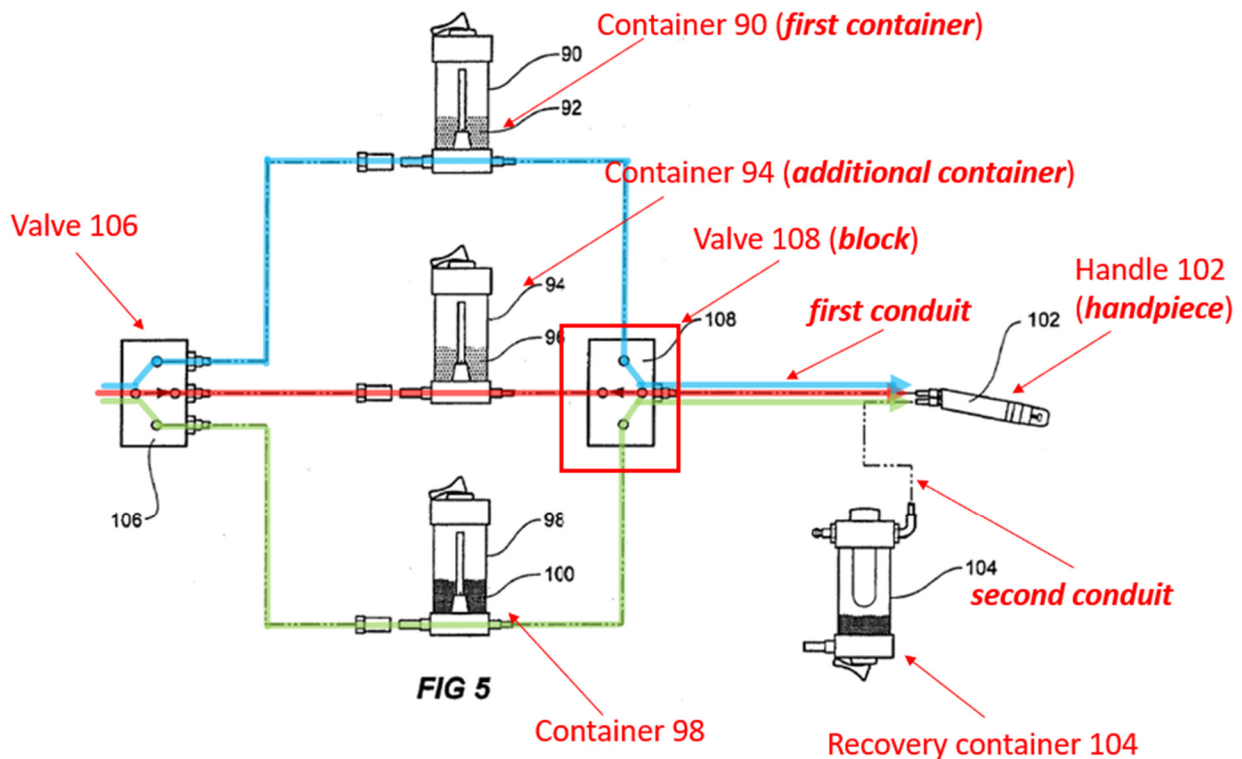


Greenberg, FIG. 1

As shown in FIG. 1, Greenberg's handles 16, 24 (or handle 102 in FIG. 5) (*handpiece*) are connected to apparatus 10 (*console*). EUNSUNG-1006, [0004], [0049]; EUNSUNG-1003, [311]. Greenberg's handles 16, 24 (or handle 102 in FIG. 5) are fluidly connected to various components (e.g., vacuum pump 12, switch 30, valve 54) enclosed in apparatus 10, as shown in FIGS. 2-4. EUNSUNG-1006, [0049]-[0059]; EUNSUNG-1003, [311].

Greenberg discloses or renders obvious the *block*. EUNSUNG-1003, [312]-[323]. As discussed in §III.C.1, FIG. 5's implementation would have been readily

incorporated into FIG. 1's apparatus. As shown in FIG. 5, Greenberg's system includes "valve 108" configured to selectively connect one of supply containers 90, 94, 98 to handle 102 depending on which container is selected via valve 106. EUNSUNG-1006, [0077]; EUNSUNG-1003, [323]. Therefore, Greenberg's valve 108 selectively receives fluid from the respective supply containers 90, 94, 98 when these containers are respectively selected to receive air flow thereinto (e.g., blue, red, and green paths in annotated FIG. 5). EUNSUNG-1003, [323].



Greenberg, FIG. 5

Greenberg's valve system (including valve 108) (*block*) is selectively in fluid communication with handle 102 (*handpiece*). EUNSUNG-1006, [0077], FIG. 5; EUNSUNG-1003, [313]. Although FIG. 5 does not label the path (dotted line)

between valve 108 and handle 102, it would have been obvious that it is defined by a tube, such as tube 20 illustrated in FIG. 1, and this tube forms a “first conduit” within the meaning of element [1.3]. EUNSUNG-1006, [0049], FIG. 1; EUNSUNG-1003, [313]-[314].

A POSITA would have understood and found obvious that one or more of (1) Greenberg’s valve 108 and (2) a subpart of Greenberg’s apparatus 10 that houses valve 108 correspond to, and perform the operations of, the “block” recited in [1.3]. EUNSUNG-1003, [315]. The ’287 patent’s specification is silent as to the term “block” while it allegedly describes a “manifold” as performing similar functionalities. EUNSUNG-1001, 5:28-30, Abstract.⁴ Similar to the ’287 patent’s manifold (or at least the portion of the manifold that performs the claimed functions), Greenberg’s valve 108 or a subpart of the apparatus housing the valve is (1) configured to selectively receive fluid from the first container (e.g., container 90) when the first container is connected to the console (e.g., apparatus 10), (2) configured to selectively receive fluid from the at least one additional container (e.g.,

⁴ Other patents of the ’287 patent’s family recite the term “manifold” for similar limitations. EUNSUNG-1017, cl. 1; EUNSUNG-1018, cl. 1; EUNSUNG-1003, [315]. Patent Owner used the term “block” in an apparent attempt to broaden the scope of protection. EUNSUNG-1001, cl. 1.

container 94) when the at least one additional container is connected to the console, and (3) configured to selectively be in fluid communication with the handpiece (e.g., handle 102) through a first conduit (e.g., tube 20) when the handpiece is connected to the console. EUNSUNG-1003, [316].

Alternatively, to the extent Patent Owner argues that the claimed “block” requires the use of a manifold and that Greenberg’s system does not comprise a manifold, a POSITA would have found it obvious to use a manifold to selectively receive fluids as described by Greenberg. EUNSUNG-1003, [317]. As Mr. Simon explains, manifolds were well-known devices for selecting between different fluids and would have been within a POSITA’s general knowledge. EUNSUNG-1003, [317]-[319] (discussing EUNSUNG-1010, EUNSUNG-1019, EUNSUNG-1020, EUNSUNG-1021, and EUNSUNG-1022). Based on this general knowledge, a POSITA would have found it obvious to implement Greenberg’s functionality using a manifold. *Id.* A POSITA would have viewed a manifold as one of a finite number of options to achieve the functionality described by Greenberg that would have been obvious to try. *Id.* A POSITA would have had a reasonable expectation of success in implementing Greenberg’s switching between different fluids and providing a single fluid output using a manifold, as it would have merely involved a simple substitution of one well-known element for another to obtain predictable results. *Id.*

Based on FIGS. 1 and 5, a POSITA would have understood and found obvious that Greenberg's valve 108 (at least part of **block**) is located inside apparatus 10 (**console**), thereby improving portability and/or organization. EUNSUNG-1006, FIGS. 1 and 5; EUNSUNG-1003, [320].

To the extent that Greenberg does not expressly describe "fluid" for its treatment solutions, a POSITA would have understood and found obvious that Greenberg's "particles" constitute "fluid" within the meaning of the '287 patent. EUNSUNG-1003, [321]-[323]. The '287 patent describes that "[t]he general term 'fluid' is used throughout synonymously with the term 'treatment material' and is to be given the same broad definition," and defines the term "treatment material" as "a broad term and includ[ing], ... medicament, a substance tending to flow or conform to the outline of its container such as ... **a plurality of fine solids**," which corresponds to Greenberg's abrasive particles. EUNSUNG-1001, 5:47-52; EUNSUNG-1003, [321]. Further, Greenberg's system "us[es] an air flow to carry particles through a hand tool." EUNSUNG-1006, [0040]; [0017]. A POSITA would have understood that the air flow carrying particles is considered to be "fluid" as used in the '287 patent. EUNSUNG-1003, [322]-[323].

[1.4]

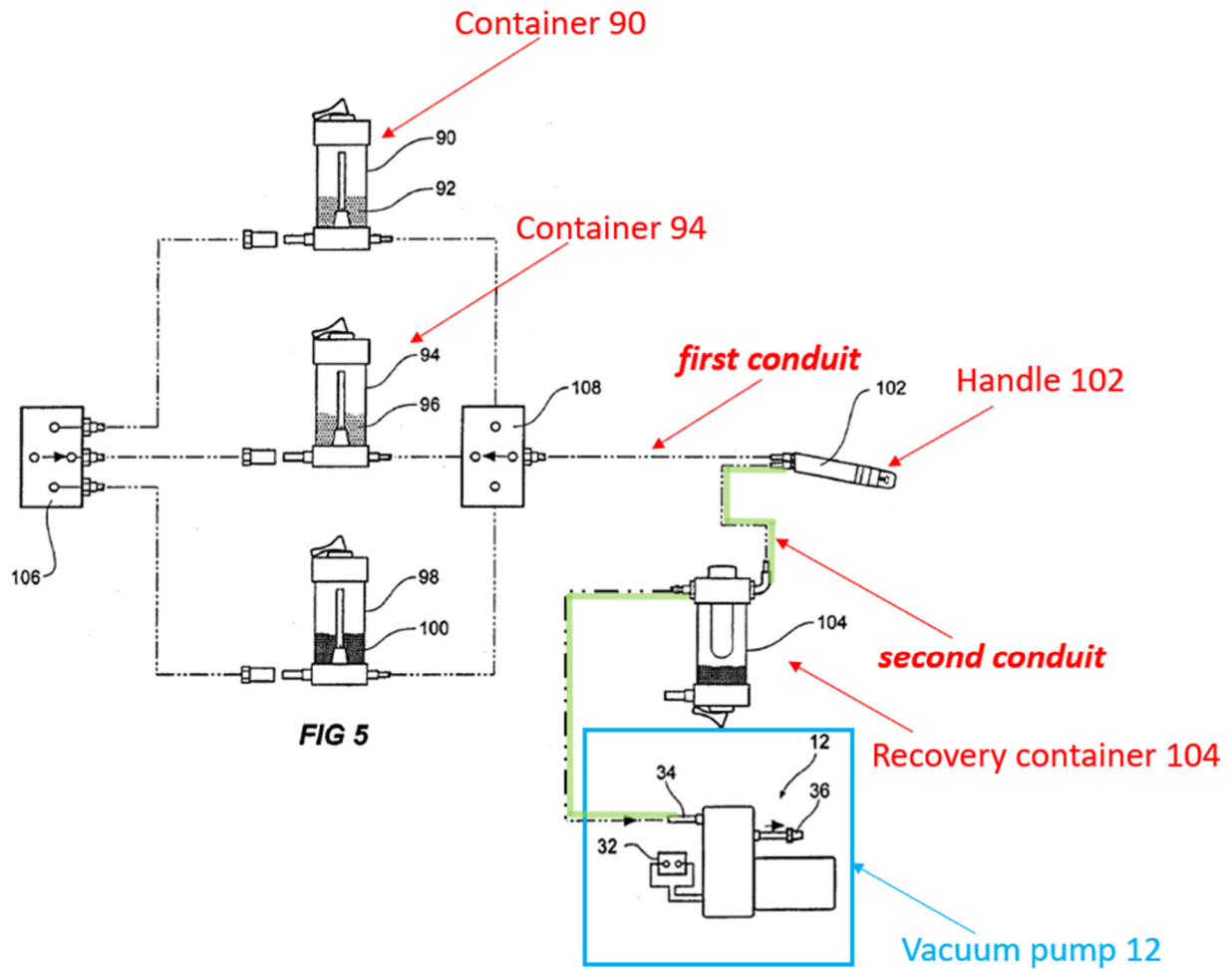
Greenberg's apparatus includes a "vacuum pump" as "pneumatic source" to

“provide[] for an air flow through the recovery container, hand tool and the selected supply container in communication with same, drawing said particles from the supply container through the hand tool and into the recovery container.” EUNSUNG-1006, [0017], [0026], [0004], [0049]-[0059], [0066], FIG. 3; EUNSUNG-1003, [324]-[327].

As described for FIGS. 1 and 2, a POSITA would have understood and found obvious that Greenberg’s vacuum pump 12 is located inside the *console* (see [1.1]), improving portability and/or organization. EUNSUNG-1003, [326]-[327].

[1.5]

As discussed in [1.3], Greenberg’s *handpiece* is connected to the *console* ([1.1]). EUNSUNG-1003, [328]. Greenberg’s vacuum pump 12 “provides for an air flow through the recovery container.” EUNSUNG-1006, [0017], [0052]; EUNSUNG-1003, [328]. Therefore, a POSITA would have understood and found obvious that Greenberg’s vacuum pump 12 is fluidly connected to recovery container 104. EUNSUNG-1003, [328]; Modified FIG. 5 (below). Accordingly, as shown in Modified FIG. 5, Greenberg’s handle 102 (*handpiece*) is *in fluid communication with* vacuum pump 12 (*vacuum source*; [1.4]) via recovery container 104. *Id.*; EUNSUNG-1006, [0017], [0052], FIG. 5; EUNSUNG-1003, [328].



Greenberg, Modified FIG. 5

While modified FIG. 5 does not label the path (dotted line) between handle 102 and recovery container 104 and similarly between recovery container 104 and the vacuum pump, it would have been obvious that the path (annotated in green) is defined by a tube, such as FIG. 1's tube 20, and this tube forms the *second conduit* as required in [1.5]. EUNSUNG-1003, [329]-[330].

[1.6]

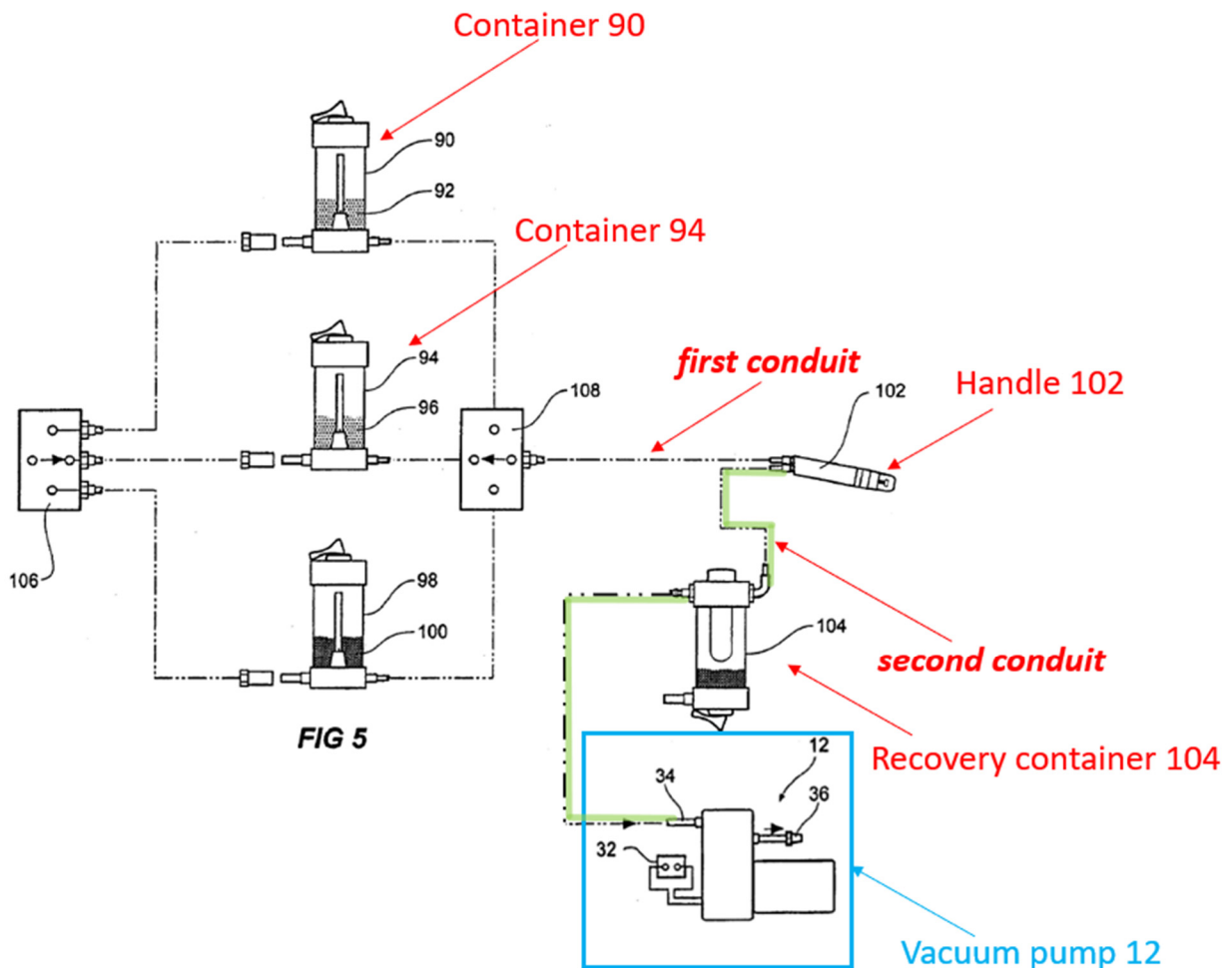
See [1.3] as to the handpiece, the first container, and the at least one additional container being connected to the console. EUNSUNG-1003, [331]-[333]. As discussed in [1.4]-[1.5], Greenberg describes recovery container 104 (*waste container*) to “draw[] [] particles from the supply container through the hand tool and into the recovery container.” EUNSUNG-1006, [0017], [0052]; EUNSUNG-1003, [333]. A POSITA would have found it obvious that the recovery container is connected to the console. EUNSUNG-1003, [333]; *supra* [1.1] (FIG. 1).

As shown in FIG. 5, Greenberg’s three supply containers that contain “different particles each of which performs different types of treatment such as abrasion.” EUNSUNG-1006, Abstract, [0077]; EUNSUNG-1003, [334] (discussing EUNSUNG-1006, [0023], [0082], [0072]-[0077], [0087], [0011]-[0012]). In Greenberg, at least three different treatment materials, including (1) purely organic materials, (b) a mixture of abrasive particles such as aluminum oxide mixed with organic materials, and (c) abrasive particles that are coated with organic materials are contained in respective containers. EUNSUNG-1006, [0072]-[0077]; EUNSUNG-1003, [334].

As discussed in [1.3], Greenberg’s particles would have been understood as *fluid*. EUNSUNG-1003, [335]-[336].

[1.7]

As discussed in [1.5], Greenberg's handle 102 (*handpiece*) is *in fluid communication with* recovery container 104 (*waste container*) and vacuum pump 12 (*vacuum source*) via the path (annotated in green) (*second conduit*. EUNSUNG-1003, [337]-[338]; EUNSUNG-1006, Modified FIG. 5.



Greenberg, Modified FIG. 5

[1.8]

Greenberg's "apparatus contains separate abrasive and fragrant particles and that a user is firstly treated with the highly abrasive particles and **subsequently**

with the organic ones that assist in leaving a residual layer on the skin.” EUNSUNG-1006, [0084], [0089], [0072]-[0077]; EUNSUNG-1003, [340].

Thus, Greenberg discloses or renders it obvious that the system is configured to deliver the first treatment fluid (e.g., “highly abrasive particles”) in the first container (e.g., container 90) and the additional treatment fluid (e.g., “organic ones”) in the at least one additional container (e.g., container 94) to the handpiece sequentially (“subsequently”). EUNSUNG-1003, [339]-[343].

3. Claim 2

As discussed in [1.1], Greenberg describes at least three supply containers in the apparatus, which would have been understood as a *first container* (e.g., container 90) and *at least one additional container* (e.g., containers 94, 98) received at the console. EUNSUNG-1003, [344]; EUNSUNG-1006, [0077], FIG. 1.

As discussed in [1.6], Greenberg’s three supply containers contain “different particles each of which performs different types of treatment such as abrasion.” EUNSUNG-1006, Abstract, [0072]-[0077]; EUNSUNG-1003, [344]-[346].

4. Claim 3

As discussed in [1.1], [1.3], and [1.8], the handpiece, the first container, and the second and third containers are each connected to the console and contain a fluid. EUNSUNG-1003, [347].

As discussed in [1.8], Greenberg’s “apparatus contains separate abrasive and

fragrant particles and that a user is firstly treated with the highly abrasive particles and **subsequently** with the organic ones that assist in leaving a residual layer on the skin.” EUNSUNG-1006, [0084], [0089], [0072]-[0077]; EUNSUNG-1003, [348]. A POSITA would have found it obvious to use Greenberg’s three containers 90, 94, and 98 to delivery to the handpiece one at a time three different treatment materials. EUNSUNG-1003, [348]-[349]. For example, it would have been obvious to apply harsh particles (to “remove quickly and efficiently top surface skin layers”), followed by gentler particles (to “compensate for any serious abrasion”), followed by organic particles (to impart “to the skin substances that help protect and nourish it”). EUNSUNG-1006, [0084], [0089], [0072]-[0077]; EUNSUNG-1003, [348].

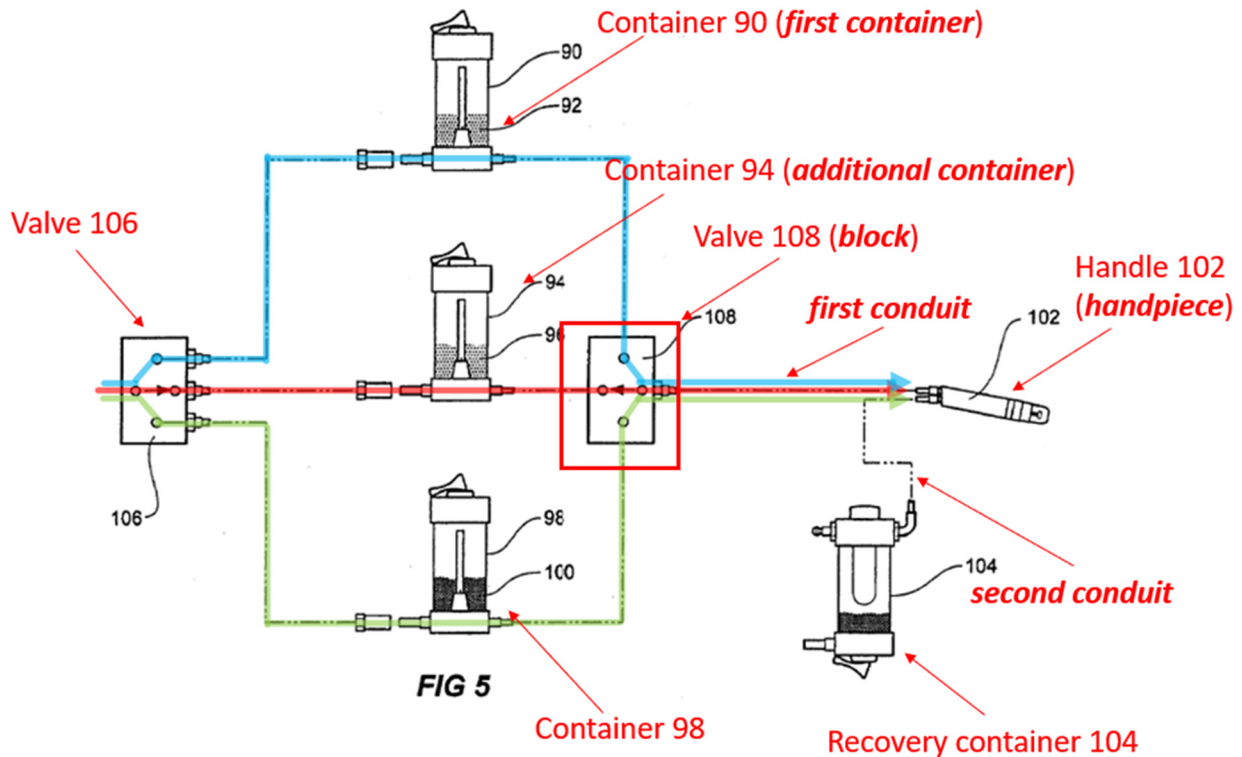
5. Claim 8

See [1.1], [1.3], [1.8] as to the first container and at least one additional container being connected to the console. EUNSUNG-1003, [350].

See [1.6] as to the first and at least one additional containers containing the first and additional treatment fluids. EUNSUNG-1006, Abstract, [0077]; EUNSUNG-1003, [350].

As discussed for [1.3], Greenberg’s valve system, which includes valve 108 and/or (2) a subpart of apparatus 10 that houses valve 108, constitutes the **block**. EUNSUNG-1003, [351]. As shown in FIG. 5, Greenberg’s valve system (**block**)

selectively connects one of supply containers 90, 94, 98 to handle 102 depending on which container is selected via valve 106, such that Greenberg's valve system (*block*) selectively receives fluid from respective supply containers 90, 94, 98 (e.g., blue, red, and green paths). EUNSUNG-1003, [351].



Greenberg, FIG. 5

Thus, Greenberg discloses or renders obvious that the block controls a flow of the first treatment fluid contained in the first container and the additional treatment fluid contained in the at least one additional container into the block with a valve (e.g., valve 108). EUNSUNG-1003, [350]-[354].

6. Claim 9

See [1.1], [1.3], [1.8], and [8] as to the first container and handpiece being

connected to the console. EUNSUNG-1003, [355]. As discussed in [1.3] and [8], Greenberg's system selectively makes fluid communication between the containers and handle to thereby control the flow of particles in each of the containers to handle 102 through the valve system. EUNSUNG-1003, [355].

FIG. 5's multiple containers each include "inlet 39 connected to a regulator 42 having an inlet 44" with "the regulator controlling the amount of air entering the supply container." EUNSUNG-1006, [0053]; EUNSUNG-1003, [356]-[357]. Thus, a POSITA would have understood and found obvious that the flow from the first container (e.g., container 90) would be controlled by regulator 42. EUNSUNG-1003, [356]-[357].

7. Claim 10

See [1.1], [1.3], [1.8], and [8] as to the first container, at least one additional container, and handpiece being connected to the console. EUNSUNG-1003, [358]. As discussed in [1.3], [8], and [9], Greenberg's system selectively (and thus *separately*) makes fluid communication between the containers and handle to thereby control the flow of particles in each of the containers to handle 102 through the valve system. EUNSUNG-1003, [358].

To the extent "separately" is interpreted to require a separate control mechanism for the second treatment solution with respect to the first treatment solution

(claim 9), it would have been obvious that Greenberg's regulator 42 acts as a separate control mechanism. EUNSUNG-1003, [359]-[360]. When the handpiece is connected to the additional container (e.g., container 94), regulator 42 is configured to control the flow of a second treatment solution in the additional container, *separately* from the flow of the first treatment solution in the first container. EUNSUNG-1003, [359]-[360].

Alternatively, a POSITA would have found it obvious to use a manifold as a separate control mechanism for implementing Greenberg's switching treatment fluids. EUNSUNG-1003, [361]-[362] (citing EUNSUNG-1020, EUNSUNG-1021, EUNSUNG-1023, EUNSUNG-1009); *see* §III.C.2 ([1.3]).

8. Claim 11

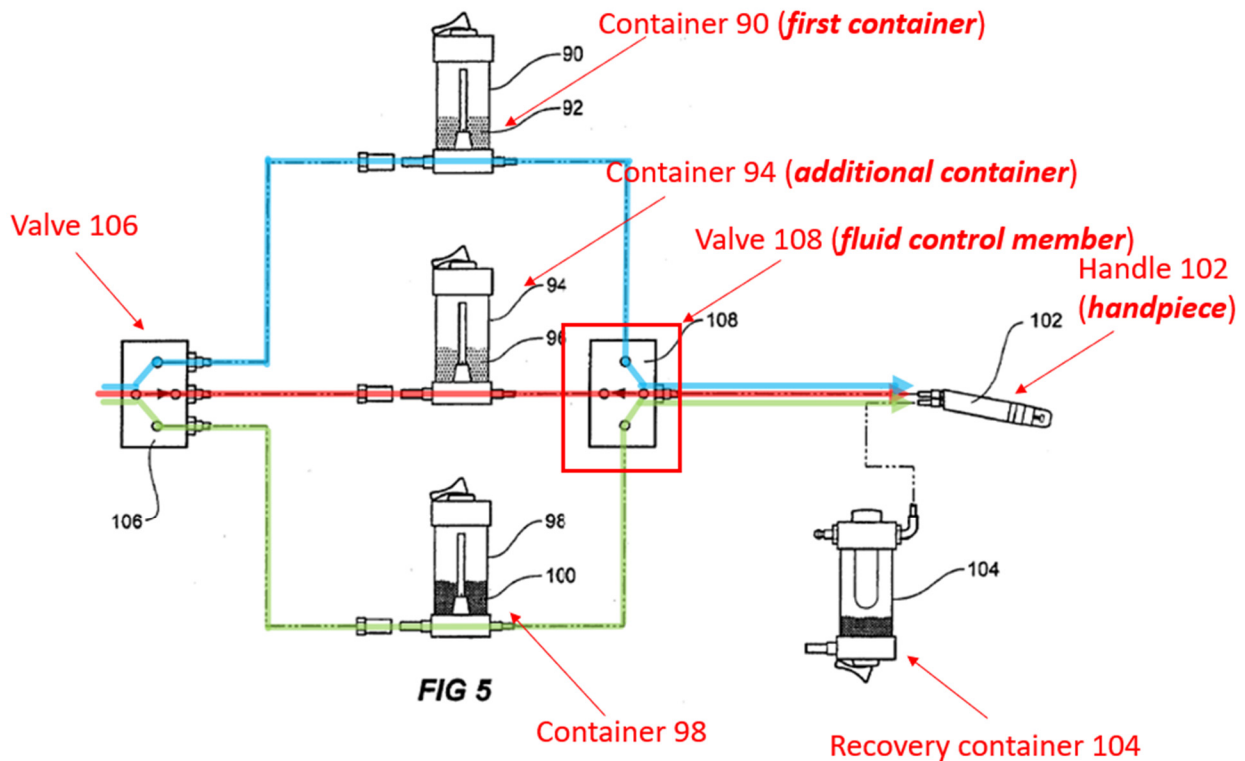
[11.pre]

See [1.pre]. EUNSUNG-1003, [363].

[11.1]

See [1.1] as to the *console*. EUNSUNG-1003, [364].

Further, Greenberg discloses or renders obvious the *fluid control member*. EUNSUNG-1003, [365]. As shown in FIG. 5, Greenberg's system includes "valve 108" *connected to* respective supply containers 90, 94, 98 (*first* and *second containers*) and *configured to be in fluid communication with* the containers. EUNSUNG-1006, [0077]; EUNSUNG-1003, [365]; *supra* [1.3].



Greenberg, FIG. 5

A POSITA would have understood and found obvious that Greenberg's valve 108 or a subpart of Greenberg's apparatus 10 that houses valve 108 correspond to, and perform the operations of, the *fluid control member* recited in [1.3]. EUNSUNG-1003, [366]-[368], [370]. This aligns with the '287 patent's limited disclosure, which is silent as to the term "fluid control member" while allegedly describing a "manifold" as having similar structure and functionality. EUNSUNG-1001, Abstract; EUNSUNG-1003, [366]-[368], [370]. As discussed in [1.3], using manifolds was nothing new and would have been within a POSITA's general knowledge. EUNSUNG-1003, [366]. Alternatively, a POSITA would have found it

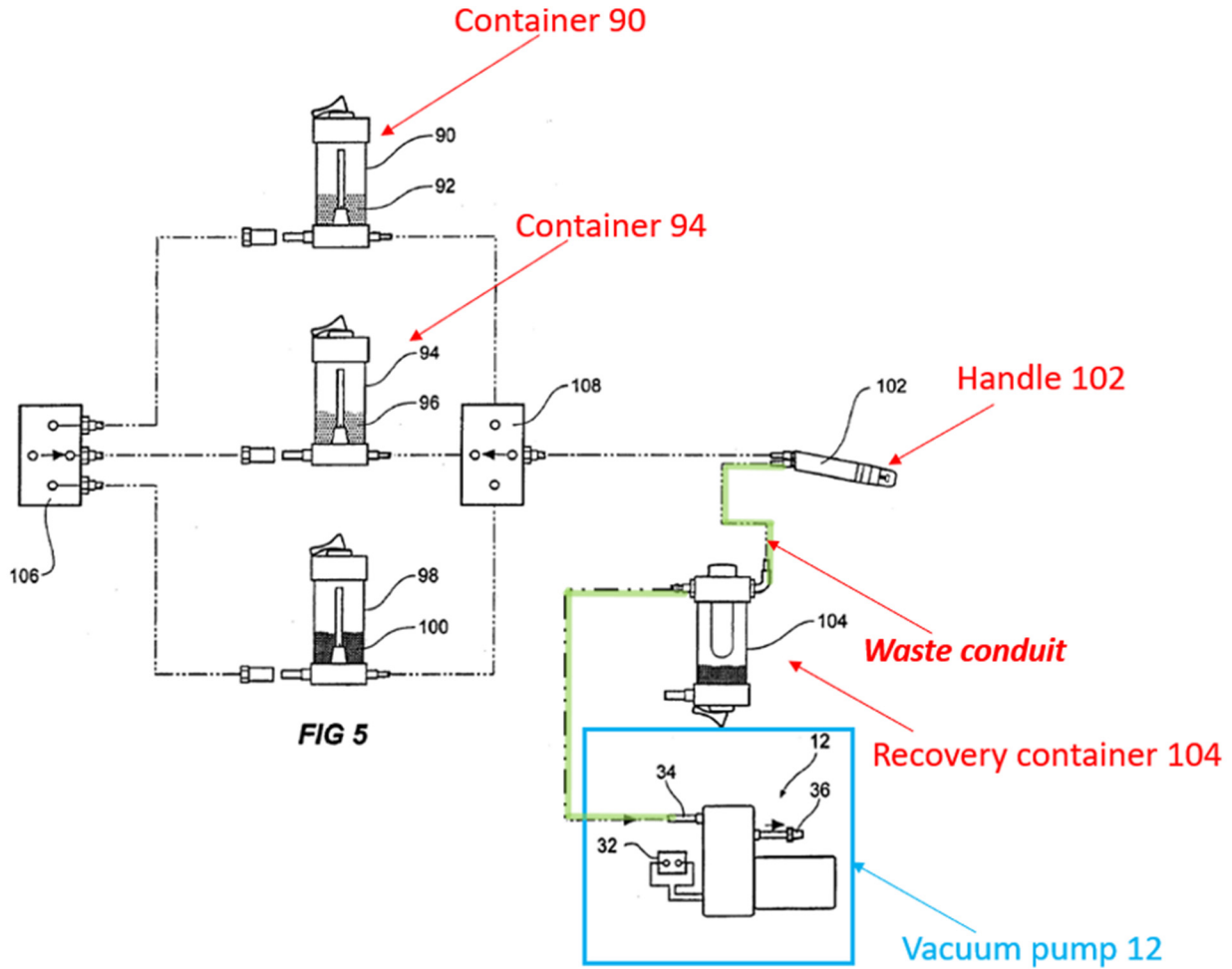
obvious to use a manifold as a separate control mechanism for implementing Greenberg's switching treatment fluids. EUNSUNG-1003, [369]-[370].

[11.2]

See [1.2]. EUNSUNG-1003, [371].

[11.3]

As discussed in [1.4]-[1.5], Greenberg's system includes "recovery container" and "vacuum pump" (*vacuum source*) to "provide[] for an air flow ... drawing said particles from the supply container through the hand tool and into the recovery container." EUNSUNG-1006, [0017], [0052], FIG. 3; EUNSUNG-1003, [372]-[373]. As discussed in [1.5] and shown in modified FIG. 5, a POSITA would have understood and found obvious that Greenberg's vacuum pump 12 is fluidly connected to recovery container 104. EUNSUNG-1003, [373]. While modified FIG. 5 does not label the tube connecting handle 102 to recovery container 104 and similarly between recovery container 104 and the vacuum pump, it would have been obvious that this tube (annotated in green below) forms the *waste conduit* as required in [11.3]. EUNSUNG-1003, [373]. As shown in FIGS. 1 and 5, this waste conduit is connected to the *console* ([11.1]). *Id.*; *supra* [1.4]. Further, as discussed in [1.5]-[1.6], Greenberg's handle (*handpiece assembly*) is connected to the *console* ([11.1]). *Id.*



Greenberg, Modified FIG. 5

Greenberg's handle is designed such that "[t]he stream of particles [] impinges on the surface against which the aperture [of the handle] is positioned causing micro-abrasions and is subsequently drawn into the recovery container together with any abraded surface debris." EUNSUNG-1006, [0052]. Thus, it would have been obvious for the tube connecting the handle and the recovery container *to move waste away from* the handle. EUNSUNG-1003, [374]-[375].

[11.4]

See [11.1] as to the first and second containers being connected to the console through the fluid control member included in the console. EUNSUNG-1003, [376]. As discussed in [11.1], Greenberg's *fluid control member* is *configured to be in fluid communication with* each of supply containers (*first and second containers*). *Id.*

[11.5]

As discussed in [11.3] and [1.5]-[1.6], Greenberg's handle (*handpiece assembly*) is connected to the *console* ([11.1]). EUNSUNG-1003, [377]-[379]. As discussed in [11.1] and shown in FIG. 5, Greenberg's *fluid control member* is *configured to be in fluid communication with* its handle. *Id.*

[11.6]

See [1.1], [1.3], [1.5]-[1.6], [1.8], [11.1], and [11.3]-[11.5] as to (i) each of the first and second containers containing treatment material, (ii) the first and second containers being connected to the console, and (iii) the handpiece assembly being connected to the console. EUNSUNG-1003, [380].

As discussed in [1.6], as shown in FIG. 5, Greenberg's device includes three supply containers to allow "select[ing] from different supply containers and thus different particles each of which performs different types of treatment such as abrasion." EUNSUNG-1006, [0077], FIG. 5; EUNSUNG-1003, [381] (citing EUNSUNG-1006, [0023], [0082], [0072]-[0077], [0087], [0011]-[0012]).

As discussed in [1.4]-[1.5] and [11.3], it would have been obvious that Greenberg's vacuum pump 12 (*vacuum source*) is connected to recovery container 104, as illustrated in FIG. 5. EUNSUNG-1003, [382]-[383]. Greenberg's vacuum pump "provides for an air flow through the recovery container, hand tool and the selected supply container in communication with same, **drawing said particles from the supply container through the hand tool** and into the recovery container." EUNSUNG-1006, [0017], FIG. 3. Greenberg's "handle includes **an aperture 40, which is positioned against the surface to be treated**, and which then causes air and thus particles to be drawn." *Id.*, [0052], [0059]. Thus, a POSITA would have understood and found obvious that Greenberg's apparatus is configured to create a vacuum along a distal end (e.g., where aperture 40 is defined, as illustrated in FIG. 2) of the handpiece assembly by pressing aperture 40 against the surface to be treated, causing the particles to be drawn from the supply container. EUNSUNG-1003, [380]-[383].

9. Claim 12

The limitations of claim 12 are substantially the same as [1.8], and the analysis of [1.8] similarly applies here. EUNSUNG-1003, [384]-[386].

10. Claim 14

See [1.4]. EUNSUNG-1003, [387].

11. Claim 15

See [1.1], [1.3], [1.6]-[1.8]. EUNSUNG-1003, [388]. As discussed in [1.8],

for example, Greenberg's apparatus is configured to deliver different treatment fluids contained in respective containers to the handpiece *sequentially*. EUNSUNG-1006, [0084], [0089]. Thus, a POSITA would have recognized and found obvious that when Greenberg's valve 108 connects the handpiece to a first container (e.g., container 90), the system is configured to deliver a single treatment material from the first container to a patient's skin. EUNSUNG-1003, [388]-[390]. Further, in the event that a user only needs to be treated with a first material from a first container (e.g., container 90), a POSITA would have used Greenberg's valve 108 to connect the handpiece to the first container, so that the system delivers a single treatment material from the first container to a patient's skin. *Id.*, [390].

12. Claim 16

As discussed in [1.3], a POSITA would have understood Greenberg's particles constitute "fluid" for skin treatment (*skin treatment fluid*). EUNSUNG-1003, [391]-[392]; EUNSUNG-1001, 5:47-52; EUNSUNG-1006, [0017], [0040].

13. Claim 22

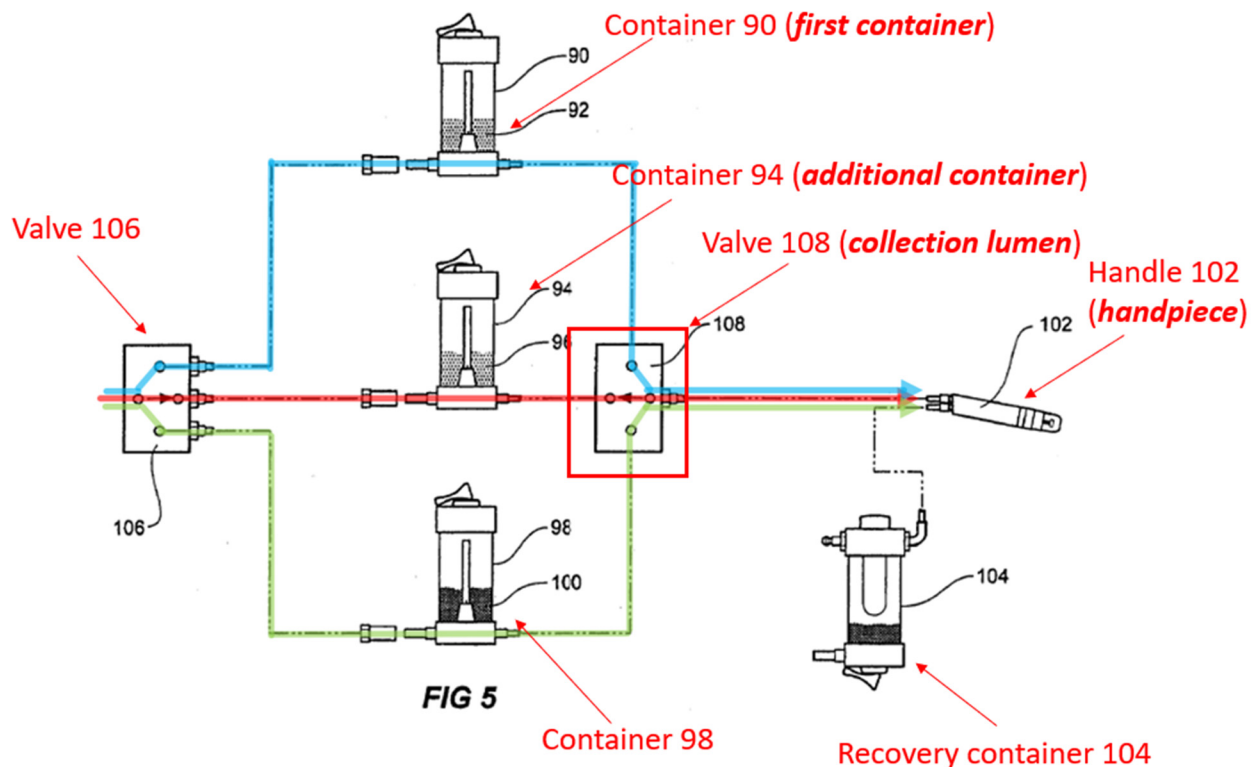
[22.pre]-[22.1]

See [1.pre]-[1.1]. EUNSUNG-1003, [393]-[394].

[22.2]

As discussed in [1.3], Greenberg renders obvious the *block* (e.g., valve 108 or a subpart of apparatus 10 that houses valve 108) that is configured to selectively be in fluid communication with the first and at least one additional containers when

the first and at least one additional containers are connected to the console. EUN-
SUNG-1003, [395]. A POSITA would have understood and found obvious that this
block has one or more passages or spaces (*collection lumen*), such as a pas-
sage/space in or connected to valve 108, which are configured to selectively be in
fluid communication with the first and additional containers. EUNSUNG-1006,
[0077], FIG. 5; EUNSUNG-1003, [395]-[400].



Greenberg, FIG. 5

Alternatively or additionally, a POSITA would have understood and found
obvious that other fluid passages and spaces defined in Greenberg's system would

constitute the *collection lumen*. EUNSUNG-1003, [397]. For example, a POSITA would have found a passage/space within one or more of (1) handle 102 and (2) tubing connecting handle 102 to valve 108 as constituting a *collection lumen*. EUNSUNG-1003, [397]; EUNSUNG-1006, [0017], [0052], [0059], FIG. 5. This also align with the '287 patent's disclosure of the "lumen" 90, 92 in the handpiece assembly 18. EUNSUNG-1001, 7:65-8:12; EUNSUNG-1003, [397].

Further, as discussed in [1.3], even assuming that a manifold is required for claim 22, a POSITA would have found it obvious to use a manifold having a collection lumen to implement Greenberg's switching treatment fluids. EUNSUNG-1003, [398]. As Mr. Simon explains, a manifold was well-known for including a tube or channel (*collection lumen*) for selectively flowing different treatment fluids. EUNSUNG-1003, [398] (discussing EUNSUNG-1020, EUNSUNG-1021, EUNSUNG-1023, EUNSUNG-1009).

Lastly, a POSITA would have found it obvious to use a collection lumen to direct the flow of the treatment materials to the aperture 40 in Greenberg's handle 102. EUNSUNG-1003, [399]-[400]; EUNSUNG-1006, [0052], [0059]. As Mr. Simon explains, using a collection lumen to direct the treatment material to a handpiece's aperture was well-known and would have been within a POSITA's general knowledge. EUNSUNG-1003, [399] (discussing EUNSUNG-1024, EUNSUNG-1004, EUNSUNG-1020).

[22.3]

Greenberg's "hand tool positioned on a surface to be treated and including an aperture so located that particles passing through said hand tool are caused to impinge on the surface thereby treating it." EUNSUNG-1006, [0017], FIG. 3, [0052], [0059] ("[t]he appropriate hand tool is then used **with its aperture 40 positioned against a surface to be treated**"). Thus, Greenberg's handpiece has a working end (e.g., the end comprising aperture 40) configured to contact skin tissue of a subject during use. EUNSUNG-1003, [401].

[22.4]

See [1.4]-[1.7], [22.3] as to the working end of the handpiece being in fluid communication with a vacuum source, and the handpiece being connected to the console. EUNSUNG-1003, [402].

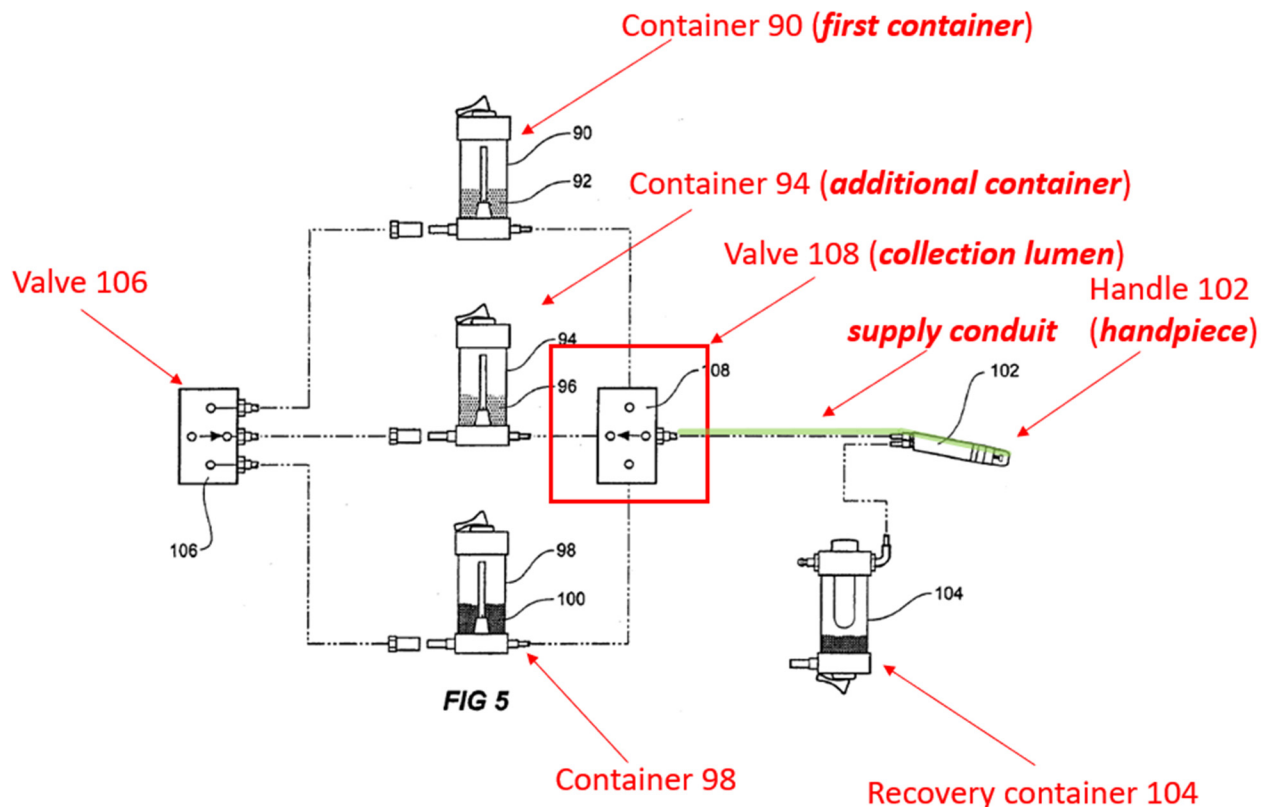
As discussed further in [11.3] and [11.6], it would have been obvious that Greenberg's vacuum pump 12 (***vacuum source***) is connected to recovery container 104 and, when activated, draws the treatment material from the supply container to the handpiece by creating a vacuum (***suction force***) along a distal end (e.g., where aperture 40 is defined) of the handpiece. EUNSUNG-1006, [0017], [0052], [0059], FIGS. 3 and 5; EUNSUNG-1003, [403].

Further, Greenberg's ***collection lumen*** (e.g., a passage/space within valve 108 or handle 102; [22.2]) is fluidly connected to the working end of the handle

102, as illustrated in FIG. 5. As discussed for [22.2], Greenberg's *collection lumen* is in fluid communication with the first and additional containers (e.g., containers 90, 94, 98). Thus, it would have been understood and obvious that, in Greenberg, the working end of the handpiece is in fluid communication with the first or additional container through the collection lumen. EUNSUNG-1003, [404].

[22.5]

As discussed for [22.2] and [22.4], Greenberg's *collection lumen* (e.g., a passage/space within valve 108 or handle 102; [22.2]) is fluidly connected to the working end of the handle 102, as illustrated in FIG. 5. EUNSUNG-1003, [405].



Greenberg, FIG. 5

As illustrated above, Greenberg's *collection lumen* is in fluid communication with the working end (e.g., the end comprising aperture 40) of the handle via a *supply conduit* (annotated in green). EUNSUNG-1003, [405]-[407].

[22.6]

See [1.1], [1.6], [1.8]. EUNSUNG-1003, [408].

14. Claim 23

[23.1]

See [1.4]. EUNSUNG-1003, [409].

[23.2]

See [1.6] as to the handpiece and the waste container being connected to the console. *See* [1.7] and [11.3] as to the handpiece being in fluid communication with the vacuum source and a waste container through a waste conduit (i.e., “second conduit” in [1.7]). EUNSUNG-1003, [410]-[414].

[23.3]

See [1.1], [1.3], [1.6], [1.8]. EUNSUNG-1003, [415]-[416]. Notably, a POSITA would have found it obvious to configure Greenberg to achieve sequential or simultaneous delivery of treatment fluids from the first container and at least one additional container. *Id.*, [416].

15. Claim 26

[26.pre]-[26.5]

See [1.pre]-[1.5]. EUNSUNG-1003, [417]-[422].

[26.6]-[26.7]

See [2]-[3]. EUNSUNG-1003, [423]-[424].

16. Claim 28

[28.1]

See [1.4]. EUNSUNG-1003, [425].

[28.2]

See [1.1], [1.5]-[1.7], [11.3], [23]. EUNSUNG-1003, [426].

17. Claim 29

See [1.8], [1.1], [1.3], [1.5]-[1.6], [8]. EUNSUNG-1003, [427].

18. Claims 34-36

See [8]-[10]. EUNSUNG-1003, [428]-[430].

19. Claim 37

[37.pre]-[37.5]

See [1.pre]-[1.5]. EUNSUNG-1003, [431]-[436].

[37.6]-[37.7]

See [9]-[10]. EUNSUNG-1003, [437]-[438].

20. Claim 39

[39.1]

See [1.4]. EUNSUNG-1003, [439].

[39.2]

See [1.5]-[1.7], [28.2], [11.3], [23]. EUNSUNG-1003, [440].

21. Claim 40

See [1.8], [1.1], [1.3], [1.5]-[1.6], [8], [29]. EUNSUNG-1003, [441].

22. Claim 45

See [8], [23.3], [34]. EUNSUNG-1003, [442].

D. [GROUND 2B]: Greenberg-Trueba

1. Greenberg-Trueba Combination

In the Greenberg-Trueba combination, Greenberg's system would have been modified based on Trueba's teachings of computer control and display. EUNSUNG-1003, [443]-[451]. For example, in the resulting system, Greenberg's valve 106 and/or valve 108 are further controlled by a computer (e.g., Trueba's controller 100), which is controlled by an user input (e.g., Trueba's touch screen 105), to control the flow of treatment solutions from containers (e.g., Greenberg's containers 90, 94, and 98), so that a user can use the user input device to select a flow of fluids from the containers. EUNSUNG-1003, [443]. The combined device also includes a display (e.g., Trueba's touch screen 105) that indicates which solution is being delivered. *Id.*

A POSITA would have been motivated to modify Greenberg's device by including Trueba's computer control and display for various benefits, such as added precision, automation, and clarity. EUNSUNG-1003, [444]-[451]. In fact, as Mr. Simon explains, the same reasons that would have motivated the Karasiuk-Palmer-Trueba combination (*see* §III.B.2) would similarly apply for the Greenberg-Trueba combination. *Id.*

A POSITA would have had a reasonable expectation of success in implementing the combination given the technical similarities between Greenberg and Trueba. EUNSUNG-1003, [445]-[451]. For example, similar to Greenberg, Trueba's system is "for topical application of a bioactive composition to the surface of the subject, such as a patch of skin," and configured for selecting from different treatment materials from different containers. EUNSUNG-1008, 3:22-27, 3:4-8, 5:14-26, 11:4-34, FIG. 3; EUNSUNG-1003, [445]. The Greenberg-Trueba combination would merely constitute the use of a known technique to improve similar devices in the same way. EUNSUNG-1003, [445]-[451]. By the Critical Date, computer (e.g., PLC) controlled fluid delivery systems were well-known. EUNSUNG-1007, FIG. 3; EUNSUNG-1008, FIG. 3; EUNSUNG-1015, Abstract; EUNSUNG-1003, [448]. The modification requires nothing more than automating the manual process in Karasiuk-Palmer with well-known automation techniques. EUNSUNG-1008, 11:4-34; EUNSUNG-1003, [449]-[450] (discussing EUNSUNG-1010, EUNSUNG-1006, EUNSUNG-1011).

1. Claims 1, 12, 22, 23, 29, 40 and Dependent Claims

As discussed in §III.C, Greenberg-Trueba renders obvious claims 1, 12, 22, 23, 29, and 40 for the same reasons regarding Greenberg. EUNSUNG-1003, [452], [458].

Greenberg-Trueba further renders obvious [1.8], [12], [22.6], [23.3], [29]

and [40] based on Trueba's teachings. EUNSUNG-1003, [453]. In particular, to the extent that the term "sequentially" is interpreted to require automatic switching between first and second treatment fluids, Greenberg-Trueba renders this limitation obvious. EUNSUNG-1003, [453]-[458]. As discussed in §III.D.1, Greenberg-Trueba's system employs "[c]omputerized control of medication dosing, which may be programmed by medical personnel **for subsequent automated delivery**," as taught by Trueba. EUNSUNG-1008, 6:6-9. A POSITA would have found it obvious to employ Trueba's automation in the system of Karasiuk-Palmer provide added precision (avoiding human error), automation, and clarity, resulting in automatic switching and delivery of treatment fluids in a sequential manner. EUNSUNG-1003, [449]-[450]; *In re Venner*, 262 F.2d at 95. Similarly, dependent claims 2-10 and 24-25 that inherit the same subject matter are rendered obvious by Greenberg-Trueba.

2. Claims 3, 26 and Dependent Claims

As discussed in §III.C, Greenberg-Trueba renders obvious claims 3 and 26 for the same reasons as discussed regarding Greenberg. EUNSUNG-1003, [459].

Greenberg-Trueba further renders obvious [3] and [26.7] based on Trueba's teachings. EUNSUNG-1003, [459]. As discussed regarding [1.8] above, to the extent that the term "one at a time" is interpreted to require automatic switching be-

tween first and second treatment fluids, Greenberg-Trueba renders such a limitation obvious. *Id.*; EUNSUNG-1008, 3:4-8, 5:18-6:9, 6:10-16, 11:4-34, 12:2-9.

Similarly, dependent claims 28-36 that inherit the same subject matter are rendered obvious by Greenberg-Trueba.

3. Claims 4, 17, 24, 30, 41

As discussed in §III.D.1, Greenberg-Trueba's system comprises a computing device (e.g., Trueba controller 100) configured to control at least one function (e.g., delivery of fluids) of the system. EUNSUNG-1003, [460], [465], [469]; [470], [475]; EUNSUNG-1008, 3:34-38, 4:65-5:17, 6:1-9, 6:27-7:9, 10:52-11:49, 12:2-5, FIG. 1.

4. Claims 5, 31, 42

As discussed in §III.D.1, Greenberg-Trueba's system comprises a user input device (e.g., Trueba's touch screen 105) to select a flow of fluids from the first and at least one additional container to the handpiece. EUNSUNG-1003, [461], [472], [476]; EUNSUNG-1008, 11:42-12:8, FIG. 3.

5. Claims 6, 19, 32, 43

As discussed in §III.D.1, Greenberg-Trueba's system comprises a touch screen (e.g., Trueba's touch screen 105). EUNSUNG-1003, [462], [467], [473], [477]; EUNSUNG-1008, 11:40-12:8, FIG. 3.

6. Claims 7, 20, 33, 44

As discussed in §III.D.1, Greenberg-Trueba's system comprises a display

(e.g., Trueba's display screen 105) that indicates which solution is being delivered.

EUNSUNG-1003, [463]-[464], [468], [474], [478]; EUNSUNG-1008, 11:40-12:8,

FIG. 3.

In the event an additional display is required separate from the touch screen, Trueba also discloses coupling an external computer 115 to controller 100. EUNSUNG-1008, 12:9-36, FIG. 3. A POSITA would have understood and found obvious that this external computer 115 would include an additional display separate from Trueba's touch screen 105. EUNSUNG-1003, [464].

7. Claims 18, 25

Similar to [5], Greenberg-Trueba's apparatus includes a user input device (e.g., Trueba's touch screen 105) to facilitate control of a flow of fluids or treatment materials from the containers to the handpiece assembly. EUNSUNG-1003, [466], [470]; EUNSUNG-1008, 11:40-12:8, FIG. 3.

IV. DISCRETIONARY CONSIDERATIONS

A. §325(d)

Discretionary denial is not warranted. Palmer and Trueba were not cited by the Office, let alone applied in a rejection. *See* §II.B. While Karasiuk and Greenberg were cited in a lengthy IDS, they were not addressed substantively during examination. *Id.*

Because the '287 patent's prosecution did not involve negotiation regarding the prior art combinations applied, Grounds 1A-1B and 2A-2B cannot be said to be

the same as, or substantially similar to, art or arguments that the Office previously considered. To the extent Karasiuk and Greenberg were previously considered, the Examiner erred in overlooking the teachings cited in this Petition. The Examiner also did not have the benefit of considering their teachings in combination with Palmer or Trueba.

V. FEES

Please apply any fees to Deposit Account No. 06-1050.

VI. CONCLUSION

Petitioner requests cancellation of all Challenged Claims.

VII. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8(a)(1)

A. Real Party-In-Interest Under 37 C.F.R. § 42.8(b)(1)

Petitioner, Eunsung Global Corp., is the real party-in-interest.

B. Related Matters Under 37 C.F.R. § 42.8(b)(2)

Petitioner is not aware of any disclaimers, reexamination certificates or petitions for *inter partes* review for the '287 patent. The '287 patent is the subject of ongoing litigation in *HydraFacial LLC v. Luvo Medical Technologies et al*, 2-24-cv-00587 (DUT); *Certain Hydrodermabrasion Systems and Components Thereof*, Inv. Nos. 337-TA-1416 (ITC), 337-TA-1408 (ITC); *HydraFacial LLC f/k/a Edge Systems LLC v. Sinclair Pharma Limited et al*, 2-24-cv-06250 (CDCA); *HydraFacial LLC f/k/a Edge Systems LLC v. Aesthetic Management Partners, LLC et al*, 2-24-cv-02480 (WDTN); *HydraFacial LLC f/k/a Edge Systems LLC v. Cartessa Aesthetics, LLC*, 2-24-cv-04253 (EDNY); *HydraFacial LLC f/k/a Edge Systems LLC v. Medicreations LLC*, 2-24-cv-00855 (DNV); and *HydraFacial LLC et al v. eMIRAmid USA LLC et al*, 8-24-cv-01865 (CDCA).

C. Lead And Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3)

Eunsung provides the following designation of counsel.

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D. Service Information

Please address all correspondence and service to the address listed above.

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Respectfully submitted,

Dated: September 30, 2024

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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 Petition for *Inter Partes* Review totals 13,975 words, which is less than the 14,000 allowed under 37 CFR § 42.24.

Dated: September 30, 2024

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§ 42.6(e)(4)(i) et seq. and 42.105(b), the undersigned certifies that on September 30, 2024, a complete and entire copy of this Petition for *Inter Partes* Review and all supporting exhibits were provided, via Federal Express, to the Patent Owner by serving the correspondence address of record as follows:

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