

**UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD**

BIZLINK TECHNOLOGY, INC.,
Petitioner,

v.

ANDERSON POWER PRODUCTS, INC.,
Patent Owner.

Case IPR2024-00687
Patent No. 8,808,017

**DECLARATION OF RONALD P. LOCATI
IN SUPPORT OF PATENT OWNER'S RESPONSE**

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I, Ronald P. Locati, declare as follows:

I. INTRODUCTION

1. My name is Ronald P. Locati. I have been retained by counsel for Patent Owner Anderson Power Products, Inc. (“Patent Owner”) to provide my independent analysis regarding the patentability and validity of claims 1-4 and 7-12 (collectively, the “Challenged Claims”) of U.S. Patent No. 8,808,017 (“the ‘017 patent”). I reserve the right to supplement or amend my opinions to account for any additional information that subsequently becomes available to me, any matters subsequently raised by Petitioner BizLink Technology, Inc. (“Petitioner”), any opinions subsequently provided by Petitioner’s expert Dr. Eldering, and/or in light of any relevant orders or other developments in this matter.

A. My Background, Qualifications, Publications, and Testimony

2. My background, qualifications, and educational and employment history are set forth in my curriculum vitae, which is attached hereto as **Exhibit 1**.

3. I have a Bachelor of Science degree in Mechanical Engineering Technology from the University of Pittsburgh, and since graduating have been directly involved in engineering and designing electrical connectors for 45 years.

4. I am currently an independent Senior Consultant with APEX Electrical Interconnection Consultants, LLC, a firm which provides design, engineering, and technology solutions to both manufacturers and end-users of electrical

interconnection products. My personal consulting expertise with APEX includes the design of electrical connectors, contacts, and related electromechanical devices, the forensic examination, testing, and diagnosis of failed connectors, educating and training companies and individuals about the practical application of connection technologies, and "designing around" patented connectors and interconnection devices. As a result of my work I am named inventor on five electrical connector patents that issued during my association with APEX.

5. As Vice President and Engineering Director specializing in Product Design and Development from 1997 to 2002 with Stewart Connector Systems, I directed electrical and mechanical engineers responsible for the design of modular jack and plug connectors that are used in telecommunication and data equipment. I am named inventor on eleven different electrical connector patents that resulted from my work with Stewart Connector Systems.

6. From 1994 to 1997, I held the position of Engineering Director at LRC Electronics. There I directed the design, development, and testing activities of mechanical and electrical engineers and technicians responsible for creating new coaxial cable connector designs. CATV connectors are used to power and distribute high-fidelity signals within the outdoor wiring infrastructure that enables the long-distance transmission of cable signals to an end user. I obtained seven electrical

connector patents during my tenure at LRC Electronics, each of which advanced the state-of-the-art as cable systems adopted higher performance standards.

7. I began my engineering career in 1979 with connector industry juggernaut AMP Incorporated (aka TE Connectivity), and progressed in the technical ranks up through 1994. While at AMP, my roles included Advanced Design and Development Leader with a Corporate Connector Research and Development group, Project Leader for a Product Design Team involving wiring and connectors, a Product Design and Development Engineer for miniature wiring connectors, and a Technical Design Support Engineer for various wiring connector products including crimped, soldered, insulation displacement (IDC), spring tension, and screw-terminated contacts. My responsibilities spanned hands-on design, development, testing, and commercialization of both high-power and signal-critical electromechanical connectors that are still used in various performance-critical end products today, in applications including medical devices, industrial and consumer goods, electronics, aircraft and other military and defense products, supercomputers, and vehicles, to name a few specific applications. While at AMP I invented twelve different electrical connectors.

B. Compensation

8. I am being compensated for my time in connection with this case at my standard hourly consulting rate, without regard to the outcome of this proceeding.

9. I am not, and never have been, an employee of Patent Owner. I am not receiving compensation for this declaration beyond my normal hourly fees based on my time actually spent analyzing and documenting my opinions herein on the '017 patent. My compensation is not related to the outcome of this proceeding, and I will not receive any additional compensation based on the outcome of any IPR or other proceeding involving the '017 patent.

II. SUMMARY OF MY OPINIONS

10. In summary, it is my opinion that each of the Challenged Claims of the '017 patent is patentable and valid. Petitioner and its expert, Dr. Eldering, have failed to show that the Challenged Claims are anticipated under 35 U.S.C. § 102 and rendered obvious under 35 U.S.C. § 103.

III. LEGAL PRINCIPLES

11. I will not offer opinions of the law, as I am not an attorney. However, patent counsel has informed me of several patent law principles, upon which I have relied to arrive at my conclusions.

A. Legal Standard for Claim Construction

12. It is my understanding that the purpose of the claim construction process is to determine the meaning of the terms in the Challenged Claims of the '017 patent to a person of ordinary skill in the art ("POSITA") as of the time that the claimed invention was filed. I also understand that the words of the claims, the specification, and the prosecution history are to be primarily considered in order to

construe the claims. These three sources are commonly referred to as “intrinsic evidence,” while everything else is referred to as “extrinsic evidence.”

13. It is my understanding that in an *Inter Partes* Review the words of a claim are generally given their ordinary and customary meaning to a POSITA as of the time that the patent application containing the claimed invention was filed.

14. It is my further understanding that the same words and phrases within a claim or claims are presumed to have the same meaning. It is also my understanding that different words and phrases within a claim or claims are presumed to have different meanings. Similarly, all words in a claim have meaning, and a word or phrase in a claim should not be interpreted so as to render other words or phrases in the claim superfluous.

15. It is also my understanding that a POSITA is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification and the prosecution history.

B. Legal Standard for Anticipation

16. I understand that a patent claim may be unpatentable as anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. I understand that the reference must not only disclose all elements of the claim within the four corners of the

document, but must also disclose those elements arranged as in the claim. I also understand that inherent anticipation requires that the missing descriptive material is necessarily present in the prior art. I understand that inherency may not be established by probabilities or possibilities. I further understand that a prior art reference used to establish anticipation must be enabling so that the claimed subject matter may be made or used by a POSITA.

C. Legal Standard for Obviousness

17. I understand that a patent claim may be unpatentable if the invention recited in the claim would have been obvious to a POSITA at the time the invention was made. In considering whether the Challenged Claims of the '017 patent are obvious, I have been asked to consider (a) the level of ordinary skill in the art at the time of the claimed invention, (b) the scope and content of the prior art, and (c) any differences between the prior art and the Challenged Claims of the '017 patent. I further understand that the patent owner may show “secondary factors” related to non-obviousness, including commercial success, long-felt but unresolved need, failure of others, copying, praise by others, and unexpected results.

18. I understand that a patent claim composed of several elements is not necessarily proved obvious merely by demonstrating that each of its elements was independently known in the prior art. I also understand that obviousness should not be analyzed using the benefit of hindsight. Instead, it must be analyzed from the

standpoint of what was known and understood by a POSITA at the time of the claimed invention. I further understand that a party seeking to invalidate a patent claim as obvious must demonstrate that a POSITA would have had reason to combine the teachings of the prior art references to achieve the claimed invention, and that the POSITA would have had a reasonable expectation of success in doing so. I also understand that the party must persuasively explain how the references would be combined to arrive at the claimed invention. I understand that a proposed modification or combination is inappropriate for an obviousness inquiry when the modification or combination would change a prior art reference's basic principle of operation or would render the prior art reference inoperable for its intended purpose.

19. I understand that a reference qualifies as prior art for an obviousness determination only when it is analogous to the claimed invention. I understand that prior art is analogous if it is from the same field of endeavor or if it is reasonably pertinent to the particular problem the inventor is trying to solve.

IV. THE BASES FOR MY OPINIONS

20. I have reviewed the '017 patent, including the Challenged Claims and the prosecution history of the '017 patent. (EX1001 and EX1002).

21. I have also reviewed Petitioner's Petition for *Inter Partes* Review, the attached Declaration of Dr. Eldering (EX1003), the transcript of the deposition of Dr. Eldering (EX2002), as well as the Exhibits attached to the Petition.

22. I have also reviewed the Board's Institution Decision.

23. In forming my opinions, I have considered the materials listed above and any other documents cited in this declaration. I have also relied on my own education, knowledge, and experience in the relevant art.

24. I have also considered the understanding of a POSITA around the time of the invention of the Challenged Claims.

V. PERSON OF ORDINARY SKILL IN THE ART

25. I am informed that prior art and any opinions related to the prior art are to be analyzed from the perspective of a POSITA who would be involved in the same field as the '017 patent at the time of the invention of the Challenged Claims (*i.e.*, January 4, 2013).

26. It is my understanding that six factors may be considered when determining the level of ordinary skill in the art. The six factors are: (a) the education level of the inventor; (b) the type of problems encountered in the art; (c) prior art solutions to those problems; (d) the rapidity with which innovations are made; (e) the sophistication of the technology; and (f) the education level of active workers in the field. I have used these factors in combination with the available information to determine the level of ordinary skill in the art.

27. I understand that a POSITA is presumed to possess the normal skills and technical knowledge of an individual focused on the particular problem that the

claimed invention addresses. I further understand that a POSITA is presumed to have knowledge of all references that are sufficiently related to one another and to the pertinent art, and to have knowledge of arts pertinent to the particular problem that the claimed invention addresses.

28. All the opinions that I express in this declaration have been made from the standpoint of a POSITA at the time of the invention of the Challenged Claims of the '017 patent.

29. I understand that Petitioner has proposed that a POSITA would have had at least a bachelor's degree in electrical engineering or a similar field and at least two years of experience working with electrical circuits or electrical connectors, including power connectors. (Petition at 19.)

30. I disagree with Petitioner's proposed definition of a POSITA as it is inaccurate. The '017 patent states that the "invention relates to electrical connectors, and more particularly, to an electrical connector that suppresses arcing if connected or disconnected while current is flowing." (EX1001, '017 patent, at 1:6-8.) Petitioner's definition of a POSITA, on the other hand, encompasses individuals with no experience in the '017 patent's field of electrical connectors. (Petition at 19 ("electrical circuits *or* electrical connectors").) An individual who had no experience with electrical connectors at the time of the invention of the '017 patent

would not have been considered a POSITA in the field of the '017 patent (*i.e.*, electrical connectors).

31. Petitioner's proposed definition of a POSITA is also incorrect because it is overbroad. "Working with" electrical connectors is broad enough to encompass merely using or installing electrical connectors. For example, a concert "roadie" that has used electrical connectors for decades would be considered a POSITA under Petitioner's definition, even if he or she has no idea how electrical connectors work and had never designed or developed an electrical connector. To properly understand the electrical connectors of the '017 patent, including the technical requirements of suppressing electrical arcing, a POSITA in the field of the '017 patent would have had at least two years of experience designing or developing electrical connectors.

32. I believe that a POSITA would have had at least a bachelor's degree in mechanical or electrical engineering or an equivalent field, and at least two years of experience designing or developing electrical connectors.

33. As of the time of the invention of the Challenged Claims of the '017 patent, I qualified as a POSITA under both parties' definitions.

VI. THE BOARD'S INSTITUTION DECISION

34. I understand the Board instituted review of the Challenged Claims of the '017 patent on six grounds: (1) alleged anticipation of claims 1-4 and 9 over

Winkler; (2) alleged obviousness of claim 7 over Winkler in view of Winkler2; (3) alleged obviousness of claims 8 and 10 over Winkler in view of the Handbook; (4) alleged obviousness of claims 11 and 12 over Winkler in view of Poliak; (5) alleged anticipation of claims 1-4 over Kataoka; and (6) alleged obviousness of claims 7-10 over Kataoka in view of the Handbook.

VII. OVERVIEW OF THE ‘017 PATENT AND THE CHALLENGED CLAIMS

35. The ‘017 patent, entitled “Electrical Connector with Anti-Arcing Feature,” was issued on August 19, 2014, from U.S. Patent Application No. 13/734,025 (filed January 4, 2013). (EX1001, ‘017 patent, at [21], [22], [45], [54].)

36. The ‘017 patent and the Challenged Claims generally relate to “an electrical connector that suppresses arcing if connected or disconnected while current is flowing.” (*Id.* at 1:6-8.) “Electrical connectors generally should not be connected or disconnected while the electrical load is turned on.” (*Id.* at 1:12-13.) “Electrical arcing between the separated contacts of a live electrical connector present a hazard of fire and of burns to the user, and any such arcing tends to reduce the useful life of the connector.” (*Id.* at 1:13-17.) “Nevertheless, due to the fallibility of human nature, it remains true that electrical connectors may at times be inadvertently connected or disconnected while the electrical load is turned on.” (*Id.* at 1:18-21.)

37. The '017 patent describes the prior art as having a typical “male and female connector pair” that includes a male contact 100 and a female contact 102. (*Id.* at 2:62-64.) “[I]nsulating structures 108, 110 are provided proximal to the outer faces of the contacts 100, 102 to support the contacts 100, 102, and to provide receiving channels for the two insulating housings 104, 106 to mate.” (*Id.* at 3:6-10.) As shown in FIG. 1B below, when the prior art connector pair has “been partially disconnected while a voltage is still being applied” the “leading ends of the two contacts 100, 102 are separated by a short gap” and “through-air electrical arcing 114 is taking place between them.” (*Id.* at 3:13-17.)

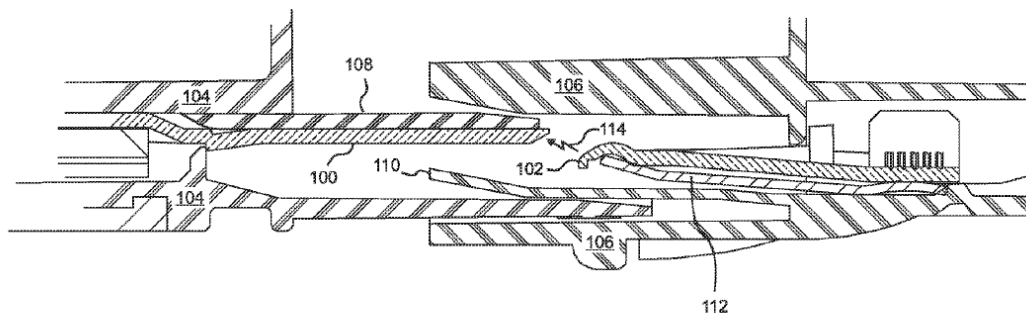


Figure 1B
Prior Art

(*Id.* at FIG. 1B (depicting through-air electrical arcing 114).)

38. To rectify this electrical arcing issue, the inventors of the '017 patent developed a “novel connector pair [that] suppresses electrical arcing between separated contacts during mating and un-mating of the connectors, without including an additional connection or switching device.” (*Id.* at 1:55-58.) The novel connector pair “includes an insulating barrier that suppresses arcing between separated contacts

during connection and disconnection of the electrical contacts ... thereby protect[ing] users from electrical burns and extend[ing] the useful life of the connector.” (*Id.* at 1:58-63.) “The insulating barrier includes both a male and a female barrier, at least one of which is configured so that it extends beyond at least one of the contacts and covers the leading edge of the contact.” (*Id.* at 1:64-67.) “The male and female barriers engage with each other when the contacts are separated, thereby closing off all through-air paths between the contacts and suppressing arcing.” (*Id.* at 1:67-2:3; *see also id.* at Abstract.)

39. Unlike the prior art connector pair shown in FIG. 1B, when the “ends of the two contacts 100, 102 [in the novel connector pair of the ‘017 patent] are not separated by a large distance, the male insulating barrier 200 is very near to or physically in contact with the [female] insulating barrier 202, thereby blocking substantially all through-air arcing paths between the contacts 100, 102.” (*Id.* at 3:30-36.)

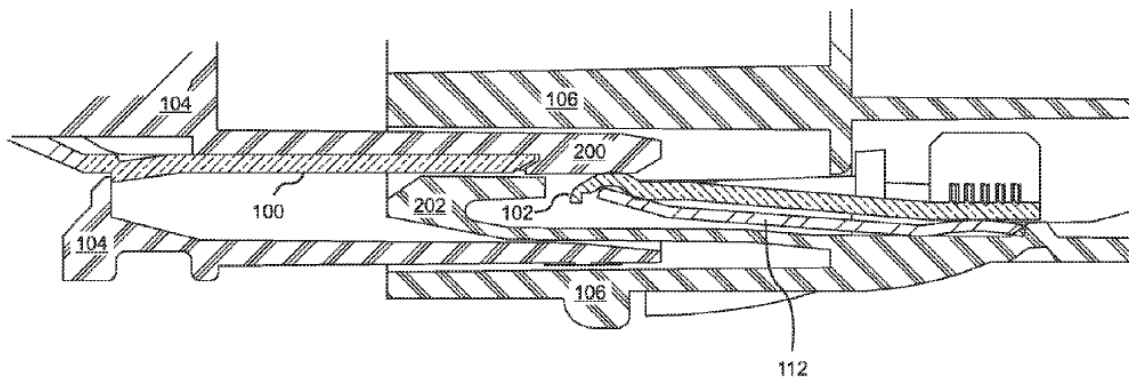


Figure 2B

(*Id.* at FIG. 2B.)

40. Independent Challenged Claim 1 of the '017 patent (the only independent claim challenged by Petitioner) is reproduced below:

1[pre] An electrical connector pair, comprising:

1[a] a first connector having a first insulating housing;

1[b] a first electrical contact supported within the first insulating housing,

1[c] the first electrical contact having a connecting surface that is substantially parallel with a longitudinal axis of the insulating housing and terminates in a leading end of the first electrical contact;

1[d] a second connector having a second insulating housing;

1[e] a second electrical contact supported within the second insulating housing,

1[f] the second electrical contact being configured to laterally engage with the connecting surface of the first electrical contact when the first connector is mated with the second connector;

1[g] a first insulating barrier within the first connector extending beyond and covering the leading end of the first electrical contact; and

1[h] a second insulating barrier extending beyond the second electrical contact within the second connector,

1[i] the second insulating barrier being configured so as to be in close proximity with the first insulating barrier when the first and second connectors are partially disconnected and the first and second electrical contacts are separated by a short distance, thereby blocking substantially all through-air arcing paths between the first and second electrical contacts.

(*Id.* at claim 1 (including Petitioner’s limitation designations).)

41. As shown above, Challenged Claim 1 of the ‘017 patent is directed to an electrical connector pair comprising a first connector having a first insulating housing and a second connector having a second insulating housing. (*Id.* at claim 1.) The first connector has a first insulating barrier extending beyond and covering a leading end of a first electrical contact supported within the first insulating housing, and the second connector has a second insulating barrier extending beyond a second electrical contact supported within the second insulating housing. (*Id.*)

42. The second insulating barrier is configured to be in close proximity with the first insulating barrier when the first and second connectors are partially disconnected and the first and second electrical contacts are separated by a short distance. (*Id.*) In the claimed configuration, substantially all through-air arcing paths between the first and second electrical contacts is blocked. (*Id.*)

VIII. OVERVIEW OF THE ASSERTED PRIOR ART

43. The Petition seeks review of the Challenged Claims of the ‘017 patent based on six grounds, which are referred to as Grounds 1A-D and Grounds 2A-B. (Petition at 18-19.) Regarding Challenged Claim 1 of the ‘017 patent (*i.e.*, the only independent Challenged Claim), the Petition asserts only anticipation grounds under 35 U.S.C. ¶ 102. (*Id.*) The Petition’s asserted anticipatory references (*i.e.*, Winkler and Kataoka) are summarized below.

A. EX1004 - U.S. Patent No. 2,838,739 (“Winkler”).

44. I have reviewed Winkler. Winkler is generally directed to “an electrical connector of novel construction of the type having one or more identical contact or terminal members and which is adapted for longitudinal telescoping engagement with a second and identical connector.” (EX1004, Winkler, at 1:44-48.) The connector includes a housing “in which provision is made for movably and yieldably mounting the terminals in a manner such that the terminals may be resiliently interlocked in their engaged position so as to prevent inadvertent disengagement thereof during normal usage.” (*Id.* at 1:48-55.) “The present terminals are also adapted for self-cleaning during engagement and disengagement thereof and are shaped so that any pitting of the terminals caused by arcing at the extreme ends thereof during disengagement will not impair the efficiency of the terminals at the areas of contact in their engaged position.” (*Id.* at 1:55-61.)

B. EX1005 - U.S. Patent No. 8,182,278 (“Kataoka”).

45. I have reviewed Kataoka. Kataoka is generally directed to “a connector which may be potentially employed for a connection of a power harness used for transmitting a large amount of power.” (EX1005, Kataoka, at 1:10-14.) “The connector 1 is used for connecting, e.g., a motor for driving a vehicle to an inverter for driving the motor.” (*Id.* at 5:58-59.) According to Kataoka, “when [a] non-through type connecting member is employed, there is a new problem that it is

necessary to take measures to prevent abrasion at the contact point.” (*Id.* at 2:27-29.) To address this problem, Kataoka developed a connector constructed so as “to suppress abrasion due to fine sliding at the contact points while ensuring insertability between connecting terminals when the connector is fitted even if a non-through type connecting member is employed.” (*Id.* at 3:59-62.)

IX. CLAIM CONSTRUCTION

A. “insulating”

46. The term “insulating” is recited several times in Challenged Claim 1 of the ‘017 patent. (EX1001, ‘017 patent, at claim 1.) The proper construction of the term “insulating” is “electrically insulating.”

1. The Claims Support Patent Owner’s Proposed Construction.

47. Claims 1, 4, 13, and 17 of the ‘017 patent recite four “insulating” structures: “a first insulating housing,” “a second insulating housing,” “a first insulating barrier,” and “a second insulating barrier.” (EX1001, ‘017 patent, at claims 1, 4, 13, and 17.)

48. The claims of the ‘017 patent support that these “insulating” structures are “electrically insulating” because the claims are expressly directed to an “electrical connector pair” comprising first and second connectors each having an “electrical contact” supported therein. (*Id.* at claims 1 and 13.) The second connector includes a “second insulating barrier” that is configured “to be in close proximity with [a] first insulating barrier [in the first connector] when the first and

second connectors are partially disconnected and the first and second electrical contacts are separated by a short distance.” (*Id.* at claims 1 and 17.)

49. The claims also support that the claimed “insulating” structures are “electrically insulating” because the claims recite that the first and second insulating barriers “block[] substantially all through-air arcing paths between the first and second electrical contacts.” (*Id.*) Arcing in the claims refers to electrical arcing, which occurs when an electrical current jumps the gap between two conductors (*e.g.*, the gap between the first and second electrical contacts). (*Id.* at Abstract (“The transitional segment is configured to make first and last contact during the initial phases of mating and un-mating, thereby increasing electrical resistance and significantly lowering the electrical current and the energy available for electrical arcing.”), 1:6-8 (“The invention relates to electrical connectors, and more particularly, to an electrical connector that suppresses arcing if connected or disconnected while current is flowing.”); *see also id.* at 1:14-15, 1:27-28, 1:49-50, 1:55-56, 2:10-11 (referring to electrical arcing).) To block substantially all through-air electrical arcing between the claimed first and second electrical contacts, the claimed first and second insulating barriers must be electrically insulating. Thus, the claims are clear that the claimed “insulating” structures are “electrically insulating.”

2. The Specification Supports Patent Owner's Proposed Construction.

50. The specification also supports that the claimed “insulating” structures are “electrically insulating” because the specification teaches that the “insulating” structures block substantially all through-air arcing paths and protect a user from electrical burns and other detrimental effects of arcing. (EX1001, ‘017 patent, at Abstract, 1:6-8, 1:48-51, 1:55-58.) To do that, the claimed “insulating” structures must be electrically insulating.

51. The specification further supports that the claimed “insulating” structures are electrically insulating because it teaches that the connector pair (which includes first and second insulating barriers that are configured to engage with each other when the connectors’ electrical contacts are partially disconnected and separated by a small gap) suppresses electrical arcing during connection and disconnection by substantially blocking or resisting the flow of electrical current. (*Id.* at Abstract, 1:6-8, 1:48-51, 1:55-61, 1:64-2:3, 2:42-44, 3:30-40.) In the claimed configuration, substantially all through-air electrical arcing paths between the first and second electrical contacts are blocked. (*Id.*)

52. The specification also distinguishes the claimed novel connector pair from prior art connector pairs that allowed through-air electrical arcing to take place between the electrical contacts as the connectors were mated and un-mated. (*Id.* at 3:13-17; *see also id.* at 1:42-47; *id.* at FIG. 1B (showing electrical arcing 114

between contacts 100, 102).) The specification teaches that the claimed “insulating” structures block the tendency of electrical current to arc from the female contact 102 to the male contact 100 by having high (or even “near-infinite”) electrical resistance. (*Id.* at 3:63-4:5; *see also id.* at Abstract, 4:6-10.) The claimed “insulating” structures block or resist the flow of electrical current (*i.e.*, are electrically insulating), thus preventing electrical arcing.

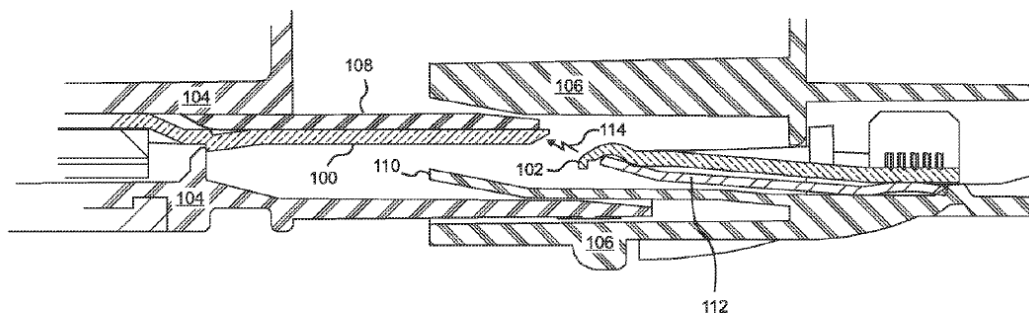


Figure 1B
Prior Art

(*Id.* at FIG. 1B (showing electrical arcing 114 between contacts 100, 102).)

53. The specification also supports that the claimed “insulating” structures are electrically insulating because it teaches that the claimed “insulating” structures protect a user from electrical burns and other detrimental effects of electrical arcing. To protect a user from those effects, the claimed “insulating” structures must be electrically insulating. The specification states that the insulating barriers “protect[] users from electrical burns and extend[] the useful life of the connector.” (*Id.* at 1:61-63.) The connector pair of the ‘017 patent also includes insulating housings 104, 106 that surround the male and female electrical contacts 100, 102. (*Id.* at 3:2-

3, FIGS. 2A-B.) Like the first and second insulating barriers, the insulating housings 104, 106 are configured to “provid[e] some protection to a user in case arcing occurs when the user is handling the connector pair.” (*Id.* at 3:2-6.)

3. The Petition Supports Patent Owner’s Proposed Construction.

54. The Petition also supports that “insulating” means “electrically insulating.” In the Petition, Petitioner asserts that the claimed “insulating” structures must be made of nonconductive material. (Petition at 64, 75.) Nonconductive means that the material does not conduct electricity and is, therefore, electrically insulating. The Petition asserts that Kataoka’s “[i]nsulating member 43a of insulator 8a is an ‘insulating barrier’ because it is formed of non-conductive material and because it ‘ensure[s] insulation between the contact points (or between a contact point and the first terminal housing).’” (Petition at 75; *see also id.* at 74 (“insulators 8a-8d formed of a non-conductive resin...”).) The Petition also asserts that Kataoka’s “[h]ousing 5 is an ‘insulating housing,’ because it is formed of non-conductive resin.” (*Id.* at 64.)

55. The Petition further asserts that insulating materials prevent electrical arcing because electrical current does not travel through the insulating material. (*Id.* at 7.) The Petition asserts that insulating barriers are designed to prevent electric shock to a user’s hand or finger. (*Id.* at 16.) The Petition confirms that the claimed

“insulating” structures prevent electrical conductivity and that the proper construction of the term “insulating” is “electrically insulating.”

4. The Extrinsic Evidence Supports Patent Owner’s Proposed Construction.

56. The extrinsic evidence also supports Patent Owner’s proposed construction of “insulating.” The ‘017 patent describes the field of the invention as follows: “The invention relates to electrical connectors, and more particularly, to an electrical connector that suppresses arcing if connected or disconnected while current is flowing.” (EX1001, ‘017 patent, at 1:6-8.) In this field, the term “insulating” is used to refer to electrically nonconducting materials. A POSITA in the field of the ‘017 patent understand the term “insulating” to mean “electrically insulating.”

B. “within”

57. The term “within” is recited several times in Challenged Claim 1 of the ‘017 patent. (EX1001, ‘017 patent, at claim 1.) The proper construction of the term “within” is “on the inside of.” This construction is consistent with the intrinsic evidence.

58. Challenged Claim 1 recites several structures that are “within” (*i.e.*, on the inside of) another structure. Specifically, Challenged Claim 1 recites (i) “a first electrical contact supported *within* the first insulating housing”; (ii) “a second electrical contact supported *within* the second insulating housing”; (iii) “a first

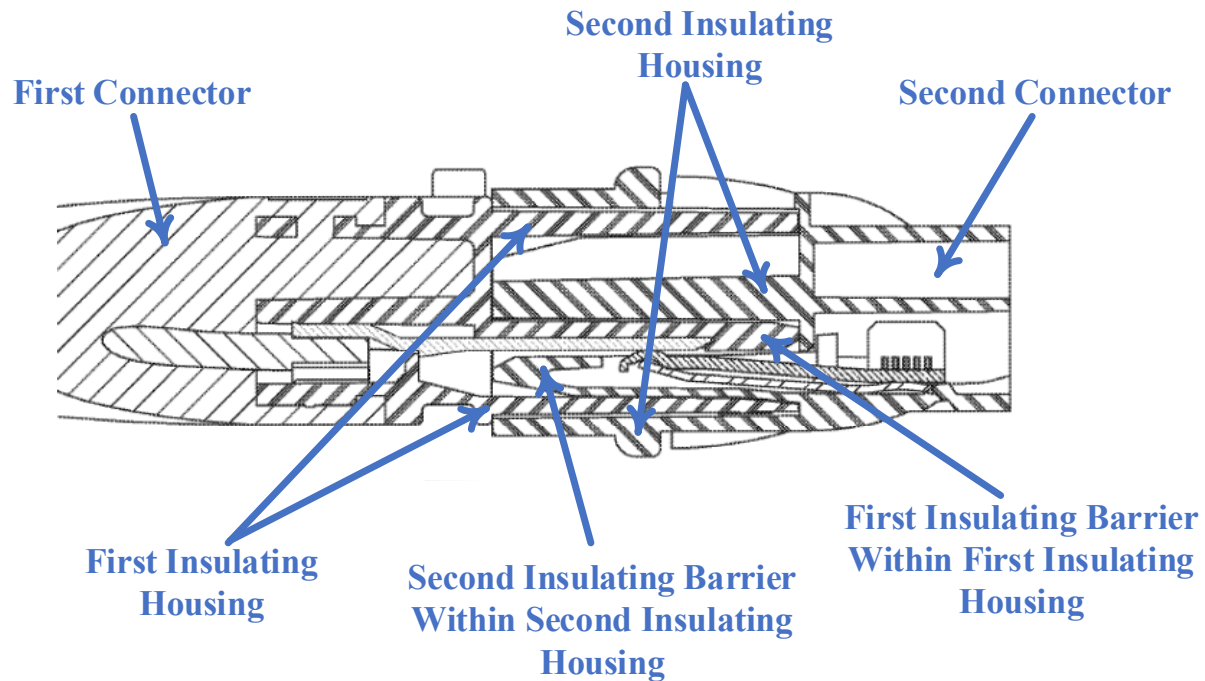
insulating barrier *within* the first connector”; and (iv) “a second insulating barrier extending beyond the second electrical contact *within* the second connector.” (EX1001, ‘017 patent, at claim 1 (emphases added).)

59. The specification of the ‘017 patent teaches that each of the claimed electrical contacts and insulating barriers is within (*i.e.*, on the inside of) another structure (*i.e.*, an insulating housing and a connector, respectively).

60. For example, the specification teaches “[i]nsulated housings 104, 106 surround the male and female [electrical] contacts.” (EX1001, ‘017 patent, at 3:2-3.) The insulated housings would not “surround” the electrical contacts if the contacts were on the outside of the insulated housings. Rather, the electrical contacts are within (*i.e.*, on the inside of) the insulated housings.

61. Like electrical contacts 100, 102, the specification teaches that insulating barriers 200, 202 are within (*i.e.*, on the inside of) the connectors. According to the specification, “additional insulating structures 108, 110 are provided proximal to the outer faces of the [electrical] contacts 100, 102.” (EX1001, ‘017 patent, at 3:6-8.) These insulating structures 108, 110 are “replaced by insulating barrier structures 200, 202.” (*Id.* at 3:18-23.) The specification discloses that insulating barriers 200, 202 are configured to “block[] substantially all through-air arcing paths between the [electrical] contacts 100, 102” when the connectors are in a partially disconnected configuration. (*Id.* at 3:30-40; *see also id.* at Abstract.)

62. Figure 3B, reproduced below, shows that the insulating barriers are within (*i.e.*, on the inside of) the insulating housings of the first and second connectors:



(*Id.* at FIG. 3B (annotated).)

63. Similarly, in Figures 3A and 4A—which depict top views of a complete connector pair in the connected and partially disconnected configurations, respectively—neither the electrical contacts nor the insulating barriers are visible because they are within (*i.e.*, on the inside of) the connectors and thus cannot be seen from the exterior:

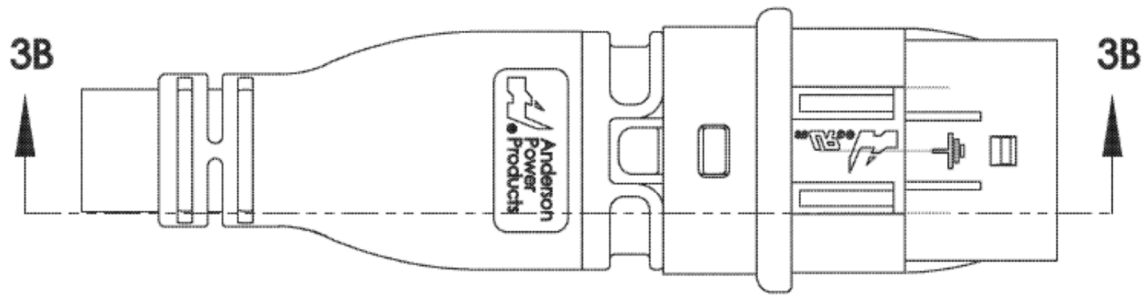


Figure 3A

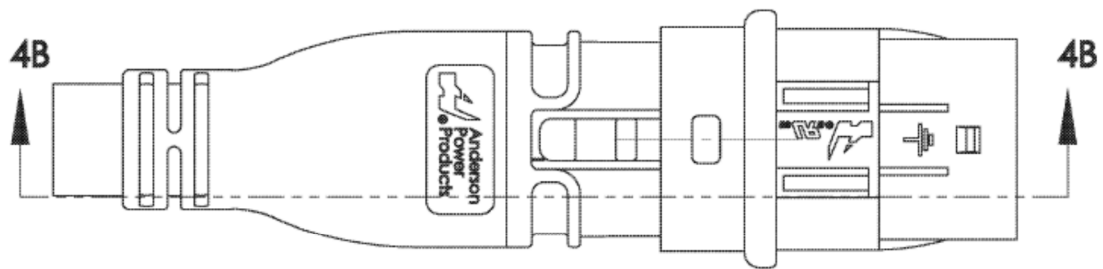


Figure 4A

(*Id.* at FIGS. 3A, 4A; *see also id.* at 3:41-48.)

64. The correct construction of the term “within” is “on the inside of.”

X. PETITIONER HAS FAILED TO MEET ITS BURDEN OF PROVING THAT THE CHALLENGED CLAIMS OF THE ‘017 PATENT ARE UNPATENTABLE

A. Ground 1A: Petitioner Has Failed To Show That Winkler Anticipates Challenged Claims 1-4 And 9.

1. Petitioner Has Failed To Show That Winkler Anticipates Challenged Claim 1.

(a) Petitioner Has Failed To Show That Winkler Discloses Limitation 1[f]: “the second electrical contact being configured to laterally engage with the connecting surface of the first electrical contact when the first connector is mated with the second connector.”

65. Limitation 1[f] recites: “the second electrical contact being configured to laterally engage with the connecting surface of the first electrical contact when the first connector is mated with the second connector.” (EX1001, ‘017 patent, at claim 1.)

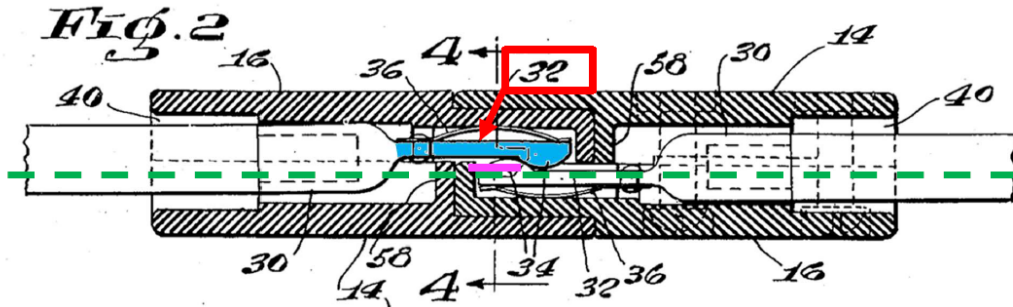
66. Petitioner has failed to show that Winkler discloses Limitation 1[f] for two reasons: (i) Petitioner and Dr. Eldering do not assert or opine that the alleged connecting surface of the first electrical contact (*i.e.*, Winkler’s “***flat elongated portion 32*** of contact member 22,” according to Petitioner and Dr. Eldering) laterally engages with the second electrical contact (*i.e.*, the other contact member 22, according to Petitioner and Dr. Eldering); and (ii) Winkler does not disclose that the elongated flat portion 32 of contact member 22 (*i.e.*, the alleged connecting surface of the first electrical contact) engages or contacts the other contact member 22 (*i.e.*, the alleged second electrical contact).

67. **First**, Petitioner and Dr. Eldering do not assert or opine that the alleged connecting surface of the first electrical contact laterally engages with the second electrical contact. Limitation 1[f] recites: “the second electrical contact being configured to laterally engage with the connecting surface of the first electrical contact when the first connector is mated with the second connector.” (EX1001, ‘017 patent, at claim 1.) The antecedent basis for Limitation 1[f]’s term “the connecting surface of the first electrical contact” is provided earlier in the claim in Limitation 1[c], which recites: “the first electrical contact having a connecting surface that is substantially parallel with a longitudinal axis of the insulating housing and terminates in a leading end of the first electrical contact.” (*Id.*)

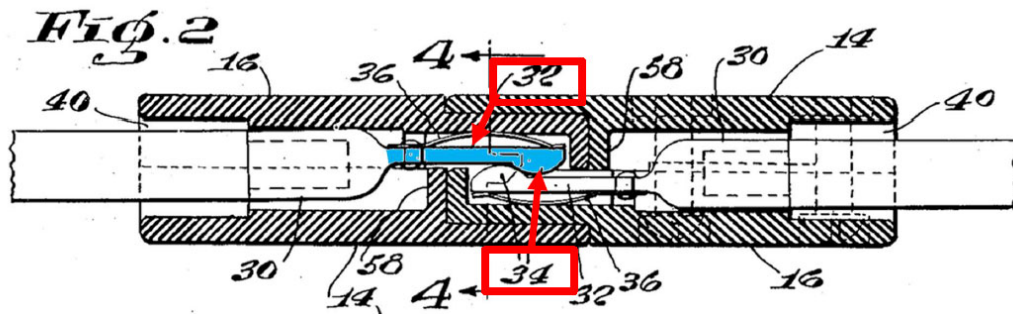
68. Regarding Limitation 1[c], Petitioner and Dr. Eldering assert that Winkler’s contact member 22 is the claimed “first electrical contact,” Winkler’s “flat elongated portion 32 of contact member 22” is the claimed “connecting surface” of the first electrical contact, and Winkler’s “convex end portion 34” is the claimed “leading end” of the first electrical contact. (Petition at 23-25; EX1003, Eldering Declaration, ¶¶ 67-70.)

69. Petitioner and Dr. Eldering provide the below illustrations that further identify the alleged “connecting surface of the first electrical contact” (*i.e.*, the elongated flat portion 32, shown in pink) and distinguish it from the alleged “leading

end of the first electrical contact” (*i.e.*, the convex end portion 34, the tip of the portion shown in blue):



(Petition at 24 (annotations in original); EX1003, Eldering Declaration, ¶ 68 (same).)



(Petition at 25 (annotations in original); EX1003, Eldering Declaration, ¶ 69 (same).)

70. Regarding Limitation 1[f], Petitioner and Dr. Eldering assert that the contact members 22 in Winkler “laterally engage” with one another because they are placed in “interlocking engagement with each other when fully engaged.” (Petition at 29 (quoting EX1004, Winkler, at 4:50-56); EX1003, Eldering Declaration, ¶ 75 (same).) Petitioner and Dr. Eldering also assert that “as the connectors approach full engagement, the springs 36 effect upward movement of the terminals in their pockets to present the curved portions 34 in hooked or interlocked relation to each other.”

(Petition at 29-30 (quoting EX1004, Winkler, at 3:18-27); EX1003, Eldering Declaration, ¶ 75 (same).)

71. Challenged Claim 1 does not recite that the first and second electrical contacts are configured to laterally engage with each other. (EX1001, '017 patent, at claim 1.) Instead, Challenged Claim 1 recites a second electrical contact configured to laterally engage “with the connecting surface” of the first electrical contact. (*Id.*)

72. Petitioner and Dr. Eldering do not assert that Winkler’s second electrical contact is configured to laterally engage with the alleged connecting surface of Winkler’s first electrical contact (*i.e.*, Winkler’s “elongated flat portion 32,” according to Petitioner and Dr. Eldering). (Petition at 28-30; EX1003, Eldering Declaration, ¶¶ 74-75.) Petitioner and Dr. Eldering assert only that Winkler’s first and second electrical contact (and, more specifically, the curved portions 34 of Winkler’s alleged first and second electrical contacts) laterally engage with one another. (*Id.*) But Winkler’s “curved portion 34” is not the alleged connecting surface of Winkler’s first electrical contact. Winkler’s “elongated flat portion 32” is the alleged connecting surface, according to Petitioner and Dr. Eldering. (Petition at 24-25; EX1003, Eldering Declaration, ¶¶ 67-70.) Petitioner’s and Dr. Eldering’s analyses of Limitation 1[f] do not assert that Winkler’s second electrical contact is configured to laterally engage with the “elongated flat portion 32” (*i.e.*, the alleged

connecting surface) of the first electrical contact, as Challenged Claim 1 requires. (Petition at 28-30; EX1003, Eldering Declaration, ¶¶ 74-75.)

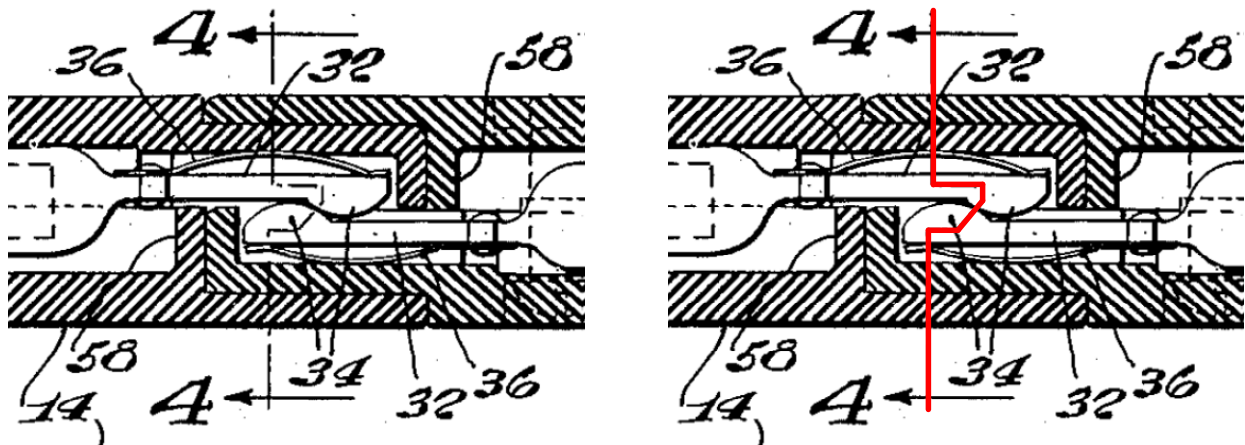
73. **Second**, Winkler does not disclose that the elongated flat portion 32 of contact member 22 (*i.e.*, the alleged connecting surface of the first electrical contact) engages or contacts the other contact member 22 (*i.e.*, the alleged second electrical contact). Engagement means “contact or touching.” Dr. Eldering agrees. (EX1003, Eldering Declaration, ¶ 148.) There is no disclosure in Winkler that the second electrical contact makes any sort of engagement or contact with the elongated flat portion 32 of the first electrical contact.

74. Winkler’s elongated flat portion 32 is mentioned only once in Winkler. (EX1004, Winkler, at 2:10-14.) Winkler does not disclose that the elongated flat portion 32 engages or contacts the second electrical contact. (*Id.*)

75. Winkler’s convex end portions 34, on the other hand, are discussed several times in Winkler. (EX1004, Winkler, at 2:10-14, 2:27-32, 3:14-27, claim 4.) Winkler describes the convex end portions 34 as “contacting portions” of the electrical contacts that have “rounded contacting faces.” (*Id.*) Winkler also discloses that, when the connectors are engaged, the convex end portions 34 “are slidingly engaged by each other.” (*Id.*) Winkler further discloses that, when the connectors are fully engaged, the convex end portions 34 are in “hooked or interlocked” engagement with each other. (*Id.*)

76. Winkler does not disclose that the elongated flat portion 32 of the first electrical contact engages or contacts the second electrical contact. (EX1004, Winkler, at 2:10-14, 2:27-32, 3:14-27, FIGS. 1-4.) The only time Winkler discloses the two electrical contacts as engaging or contacting each other is with respect to the two convex end portions 34 engaging or contacting each other. (*Id.*)

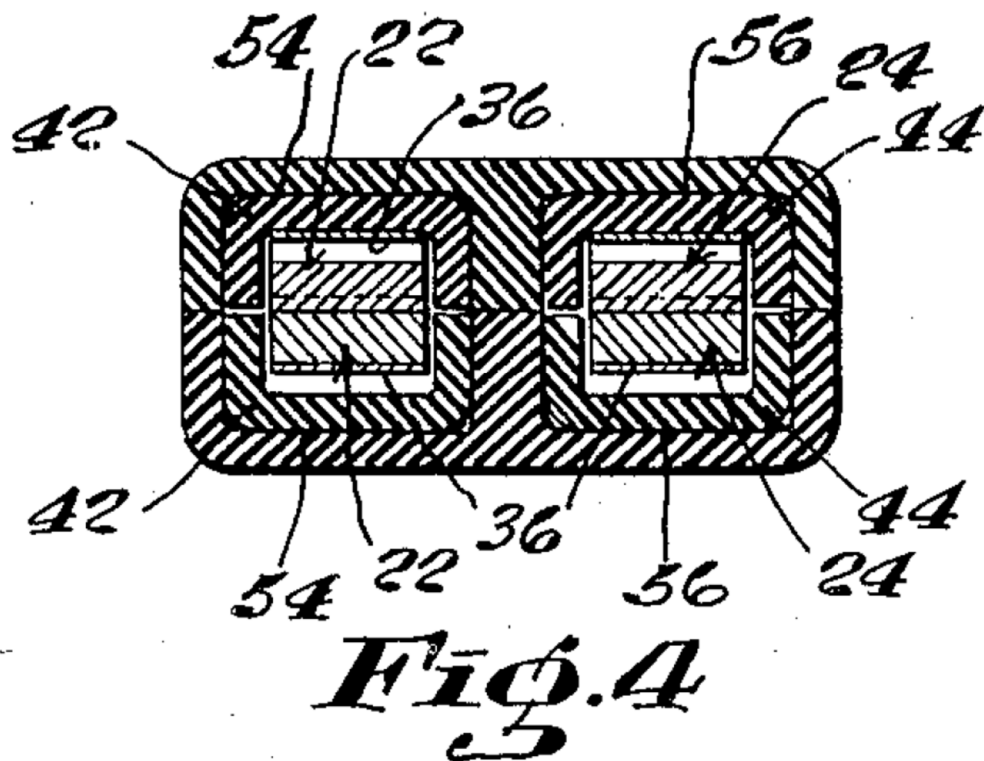
77. Winkler's Figure 4 is described as "a cross-sectional view taken on the line 4-4 of Fig. 3." (EX1004, Winkler, at 1:33-34, FIG. 4.) The "line 4-4" is shown in red in the annotated figure reproduced below. As shown below, the "line 4-4" takes an approximately 45-degree angle through the convex end portions 34 of the electrical contacts. The "line 4-4" does not go through the elongated flat portion 32 of either electrical contact.



(EX1004, Winkler, at FIG. 2 (annotated).)

78. Winkler's Figure 4, shown below, illustrates the engagement between the convex end portions 34 along the "line 4-4." (EX1004, Winkler, at FIG. 4, 1:33-

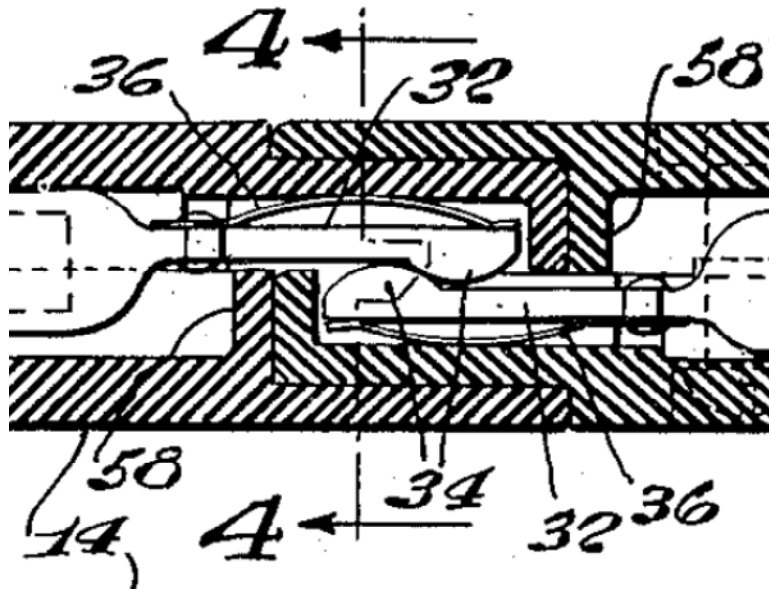
34, 3:14-27.) Winkler's Figure 4 shows that the convex end portions 34 are in "hooked or interlocked" engagement with each other at an approximately 45-degree angle. (*Id.*) Winkler's Figure 4 does not have a reference numeral 32, does not depict the elongated flat portion 32 of the first electrical contact, and does not disclose that the elongated flat portion 32 of the first electrical contact engages or is in contact with the second electrical contact. (*Id.*)



(*Id.* at FIG. 4.)

79. Like Winkler's Figure 4, none of Winkler's other figures disclose that the elongated flat portion 32 of the first electrical contact engages or is in contact with the second electrical contact. Winkler's Figure 2 discloses the opposite.

Winkler's Figure 2 shows a gap between the elongated flat portion 32 and the convex end portion 34 of the opposing electrical contact. (EX1004, Winkler, at FIG. 2.)



(*Id.*)

80. I have been informed that patent drawings do not define the precise proportions of the elements. I have also been informed that ambiguity in a patent drawing is insufficient to show anticipation. I note that nothing in Winkler indicates its figures are drawn to scale. (*See generally* EX1004, Winkler.) When viewed in isolation, Winkler's Figure 2 is at least ambiguous as to whether the elongated flat portion 32 of the first electrical contact engages or is in contact with the second electrical contact. (*Id.* at FIG. 2.) When viewed in the context of Winkler's other disclosures, it is clear to me that the elongated flat portion 32 of the first electrical

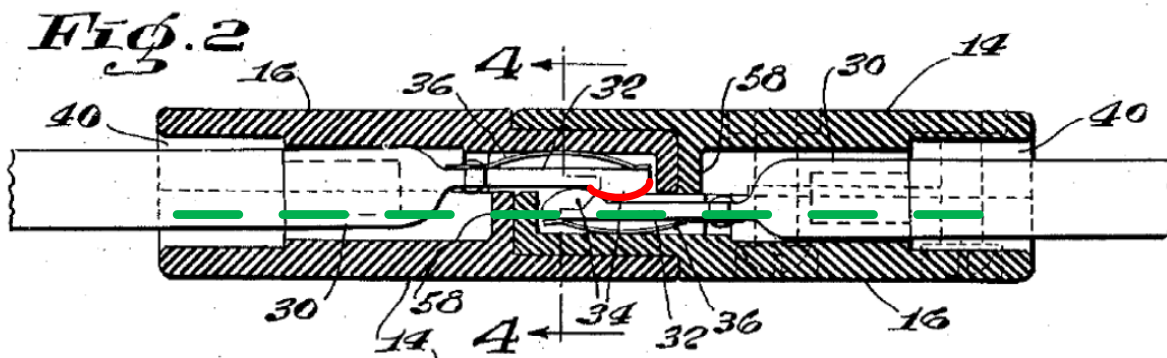
contact does not engage or contact the second electrical contact. (*Id.* at 2:10-14, 2:27-32, 3:14-27, claim 4.)

81. Petitioner and Dr. Eldering assert that Winkler’s “flat elongated portion 32” is the claimed “connecting surface.” (Petition at 23-25; EX1003, Eldering Declaration, ¶¶ 67-70.) Petitioner and Dr. Eldering do not assert that Winkler’s “convex end portion 34” is the claimed “connecting surface.” (*Id.*) I understand, however, that Dr. Eldering refused to confirm during his deposition that he is not reading Winkler’s “convex end portion 34” on the claimed “connecting surface.”

82. I have been informed that Petitioner and Dr. Eldering are precluded from asserting for the first time in their Reply that Winkler’s “convex end portion 34” is the claimed “connecting surface” because any such argument and opinion was not included in the Petition and Dr. Eldering’s declaration, respectively. Nonetheless, to the extent Petitioner and Dr. Eldering attempt to change their position in Petitioner’s Reply, Petitioner and Dr. Eldering still cannot show that Winkler anticipates Challenged Claim 1.

83. Limitation 1[c] expressly recites “the first electrical contact having a connecting surface that is substantially parallel with a longitudinal axis of the insulating housing.” (EX1001, ‘017 patent, at claim 1.) If Petitioner and Dr. Eldering were to change their position and assert that Winkler’s “convex end portion 34” is the claimed “connecting surface,” then Petitioner and Dr. Eldering would be

unable to show that Winkler discloses Limitation 1[c] and the claimed “connecting surface that is substantially parallel with a longitudinal axis of the insulating housing.” As I have illustrated below, Winkler’s “convex end portion 34” (shown in red) is not substantially parallel with the longitudinal axis of Winkler’s insulating housing (shown in green):



(EX1004, Winkler, at FIG. 2 (annotated).)

(b) Petitioner Has Failed To Show That Winkler Discloses Limitation 1[g]: “a first insulating barrier within the first connector extending beyond and covering the leading end of the first electrical contact.”

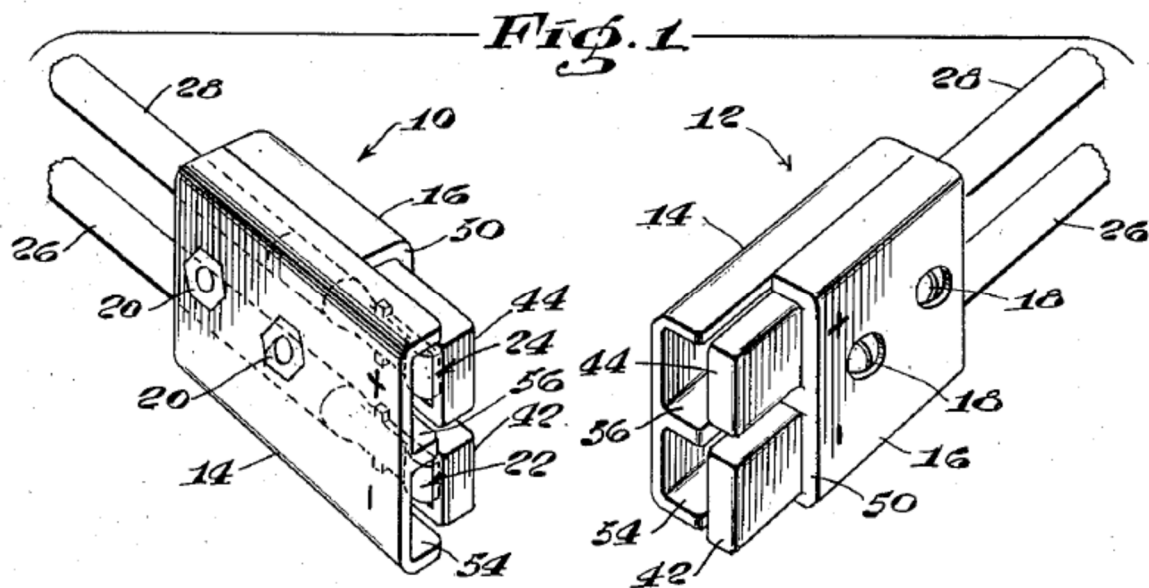
84. Limitation 1[g] recites: “a first insulating barrier within the first connector extending beyond and covering the leading end of the first electrical contact.” (EX1001, ‘017 patent, at claim 1.)

85. Petitioner has failed to show that Winkler discloses Limitation 1[g] for two reasons: (i) Petitioner and Dr. Eldering do not assert or opine that the alleged first insulating barrier of Winkler (*i.e.*, Winkler’s “receiving pocket 42”) is within the alleged first connector (*i.e.*, Winkler’s first connector 10); and (ii) Winkler does

not disclose that the receiving pocket 42 is within (*i.e.*, ***inside***) Winkler's first connector 10.

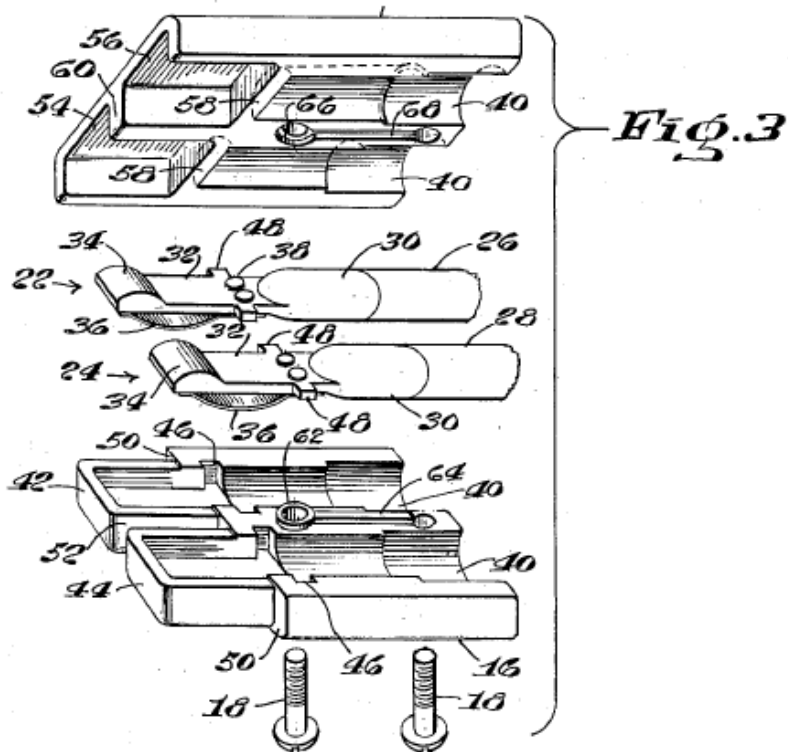
86. ***First***, Petitioner and Dr. Eldering do not assert or opine that the alleged first insulating barrier of Winkler (*i.e.*, Winkler's "receiving pocket 42") is ***within*** the alleged first connector (*i.e.*, Winkler's first connector 10). Petitioner and Dr. Eldering assert only that Winkler's "receiving pocket 42" is "a first insulating barrier that extends beyond and covers a leading end of contact member 22..." (Petition at 31; *id.* at 30; EX1003, Eldering Declaration, ¶ 76.) Again, Petitioner and Dr. Eldering do not assert that Winkler's "receiving pocket 42" (*i.e.*, the alleged first insulating barrier) is "within" Winkler's first connector 10, as Limitation 1[g] of Challenged Claim 1 requires. (*Id.*)

87. ***Second***, Winkler does not disclose that its "receiving pocket 42" (*i.e.*, the alleged first insulating barrier) is "within" (*i.e.*, inside) Winkler's first connector 10. As discussed above, the term "within" means "inside." Winkler discloses that receiving pocket 42 is formed as part of the outside or exterior of connector 10. Thus, the receiving pocket 42 is not inside the connector 10:



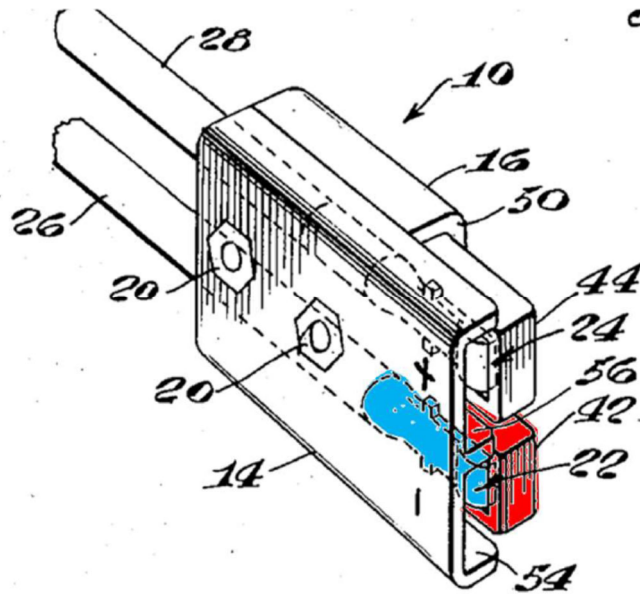
(EX1004, Winkler, at FIG. 1.)

88. As further shown in Figure 3 below, Winkler discloses that the only things within (*i.e.*, inside) Winkler's first connector 10 are the electrical contacts 22 and 24 and air:



(*Id.* at FIG. 3; *see also id.* at 2:4-7, 2:18-32, 2:39-43, claim 1.)

89. Petitioner's and Dr. Eldering's annotated version of Winkler's Figure 1 (reproduced below) further confirms that Winkler's "receiving pocket 42" (*i.e.*, the alleged first insulating barrier) is not "within" (*i.e.*, inside) Winkler's first connector 10, as the receiving pocket 42 is formed on the outside or exterior of connector 10 (not inside the connector 10):



(Petition at 30 (showing receiving pocket 42 in red and contact member 22 in blue within the receiving pocket 42); EX1003, Eldering Declaration, ¶ 76 (same).)

90. Petitioner and Dr. Eldering concede that Winkler’s receiving pocket 42, annotated in red below, is an “outer portion[] of [the] connector housing.” (Petition at 36; EX1003, Eldering Declaration, ¶ 89.)



(*Id.* (annotations in original).)

91. Petitioner and Dr. Eldering agree that Winkler's receiving pocket 42 is on the outside of the connector 10 and is not within or inside the connector 10 as Limitation 1[g] requires.

92. I have been informed that Petitioner and Dr. Eldering are precluded from asserting for the first time in their Reply that the void space inside the receiving pocket 42 is the claimed "first insulating barrier," because any such argument and opinion was not included in the Petition and Dr. Eldering's declaration, respectively. Nonetheless, to the extent Petitioner and Dr. Eldering attempt to change their position in Petitioner's Reply, Petitioner and Dr. Eldering still cannot show that Winkler discloses Limitation 1[g] of Challenged Claim 1 because a void space is not a "barrier," is not an electrically "insulating" barrier, and does not "cover[]" the leading end of the first electrical contact," as Limitation 1[g] requires. A void space is just air.

(c) Petitioner Has Failed To Show That Winkler Discloses Limitation 1[h]: "a second insulating barrier extending beyond the second electrical contact within the second connector."

93. Limitation 1[h] recites: "a second insulating barrier extending beyond the second electrical contact within the second connector." (EX1001, '017 patent, at claim 1.)

94. Petitioner and Dr. Eldering assert that Winkler's "receiving pocket 42" of second connector 12 is the claimed "second insulating barrier." (Petition at 31-

32; EX1003, Eldering Declaration, ¶ 78.) Petitioner’s and Dr. Eldering’s analysis of Limitation 1[h] relies on their analysis of Limitation 1[g]. (*Id.* (“for the same reasons as discussed above with respect to the first connector 10 for 1[g].”).)

95. As discussed above with respect to Limitation 1[g] (which I incorporate by reference herein), Petitioner has failed to show that Winkler discloses Limitation 1[h] for two reasons: (i) Petitioner and Dr. Eldering do not assert or opine that the alleged second insulating barrier of Winkler (*i.e.*, Winkler’s “receiving pocket 42”) is within the alleged second connector (*i.e.*, Winkler’s second connector 12); and (ii) Winkler does not disclose that the receiving pocket 42 is within (*i.e.*, ***inside***) Winkler’s second connector 12. (EX1004, Winkler, at FIG. 1, FIG. 3, 2:4-7, 2:18-32, 2:39-43, claim 1.) Again, as discussed above, the term “within” means “inside.”

96. For at least the same reasons discussed with respect to Limitation 1[g], Petitioner has not shown that Winkler discloses Limitation 1[h].

97. I have been informed that Petitioner and Dr. Eldering are precluded from asserting for the first time in their Reply that the void space inside the receiving pocket 42 is the claimed “second insulating barrier,” because any such argument and opinion was not included in the Petition and Dr. Eldering’s declaration, respectively. Nonetheless, to the extent Petitioner and Dr. Eldering attempt to change their position in Petitioner’s Reply, Petitioner and Dr. Eldering still cannot show that Winkler discloses Limitation 1[h] of Challenged Claim 1 because a void space is not

a “barrier” and is not an electrically “insulating” barrier, as Limitation 1[h] requires.

A void space is just air.

- (d) Petitioner Has Failed To Show That Winkler Discloses Limitation 1[i]: “the second insulating barrier being configured so as to be in close proximity with the first insulating barrier when the first and second connectors are partially disconnected and the first and second electrical contacts are separated by a short distance, thereby blocking substantially all through-air arcing paths between the first and second electrical contacts.”**

98. Limitation 1[i] recites: “the second insulating barrier being configured so as to be in close proximity with the first insulating barrier when the first and second connectors are partially disconnected and the first and second electrical contacts are separated by a short distance, thereby blocking substantially all through-air arcing paths between the first and second electrical contacts.” (EX1001, ‘017 patent, at claim 1.)

99. Petitioner has failed to show that Winkler discloses Limitation 1[i] for two reasons: (i) Petitioner and Dr. Eldering rely exclusively on a made-up diagram that does not disclose the recited elements of Limitation 1[i]; and (ii) Winkler does not disclose that when the alleged first and second connectors are partially disconnected substantially all through-air arcing paths between the first and second electrical contacts are blocked.

100. **First**, Petitioner has failed to show that Winkler discloses Limitation 1[i] because Petitioner and Dr. Eldering rely exclusively on a made-up diagram that does not disclose the recited elements of Limitation 1[i]. In their attempt to show that Winkler discloses Limitation 1[i], Petitioner and Dr. Eldering rely on the made-up diagram reproduced below:

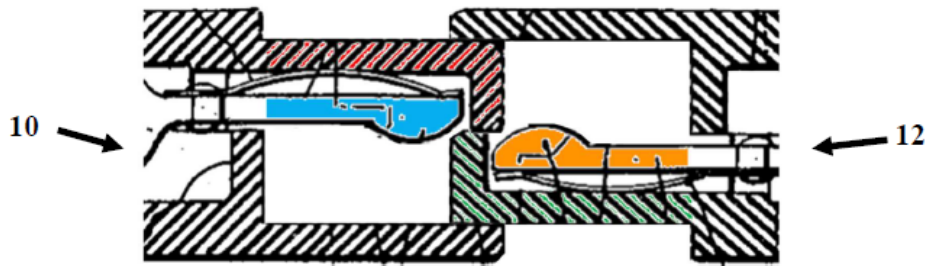


Diagram created based on Ex. 1004, Fig. 2, (modified to show connector 10 and connector 12 partially disconnected)

(Petition at 33; EX1003, Eldering Declaration, ¶¶ 80-82.)

101. Petitioner and Dr. Eldering argue that the above diagram shows that “the first and second insulation barriers [depicted in red and green, respectively] block substantially all through-air arcing paths between the first contact member and the second contact member [depicted in blue and orange, respectively].” (Petition at 33; EX1003, Eldering Declaration, ¶ 81.)

102. I disagree with Petitioner and Dr. Eldering. The above made-up diagram is not disclosed anywhere in Winkler. (See generally EX1004, Winkler.) I also would never envisage this diagram from Winkler’s actual figures and

disclosures and, as discussed further below, the above diagram is inconsistent with Winkler's actual figures and disclosures.

103. Petitioner's and Dr. Eldering's made-up diagram does not disclose "blocking substantially all through-air arcing paths between the first and second electrical contacts," as Limitation 1[i] requires. I note that Petitioner and Dr. Eldering rely on only the above diagram and do not cite any text passages from Winkler. (Petition at 33; EX1003, Eldering Declaration, ¶ 81.) The diagram is silent as to whether Winkler's alleged insulating barriers block any through-air arcing paths, let alone whether they block "substantially all through-air arcing paths," as Limitation 1[i] requires. The above diagram does not disclose anything about electrical arcing (or the lack thereof).

104. Even if one were to assume the above diagram discloses blocking through-air arcing to any extent (it does not), Petitioner's and Dr. Eldering's diagram is at best ambiguous as to whether the alleged first and second insulating barriers are configured to "block substantially all through-air arcing paths" between the first and second electrical contacts, as Limitation 1[i] requires. Petitioner's and Dr. Eldering's diagram, which, again, does not appear anywhere in Winkler, is a cross-sectional view of electrical connector pair 10, 12. The diagram depicts the arrangement of the alleged insulating barriers vis-à-vis the alleged electrical contacts at an unspecified location along the width of the electrical connector pair. The

diagram does not disclose anything about the alleged insulating barriers or their arrangement at other locations along the width of the electrical connector pair. For example, the diagram is ambiguous as to whether there are through-air arcing paths at other locations along the width of the electrical connector pair. Further, the diagram is ambiguous as to whether there are indirect through-air arcing paths that may or may not be visible in the diagram or in any of Winkler's other figures. Nothing in Winkler, including Winkler's other figures, resolves the ambiguity in Petitioner's favor and no citations to Winkler other than the made-up diagram reproduced above were cited in Petitioner's Limitation 1[i] analysis. (Petition at 32-33; EX1003, Eldering Declaration, ¶¶ 79-82.)

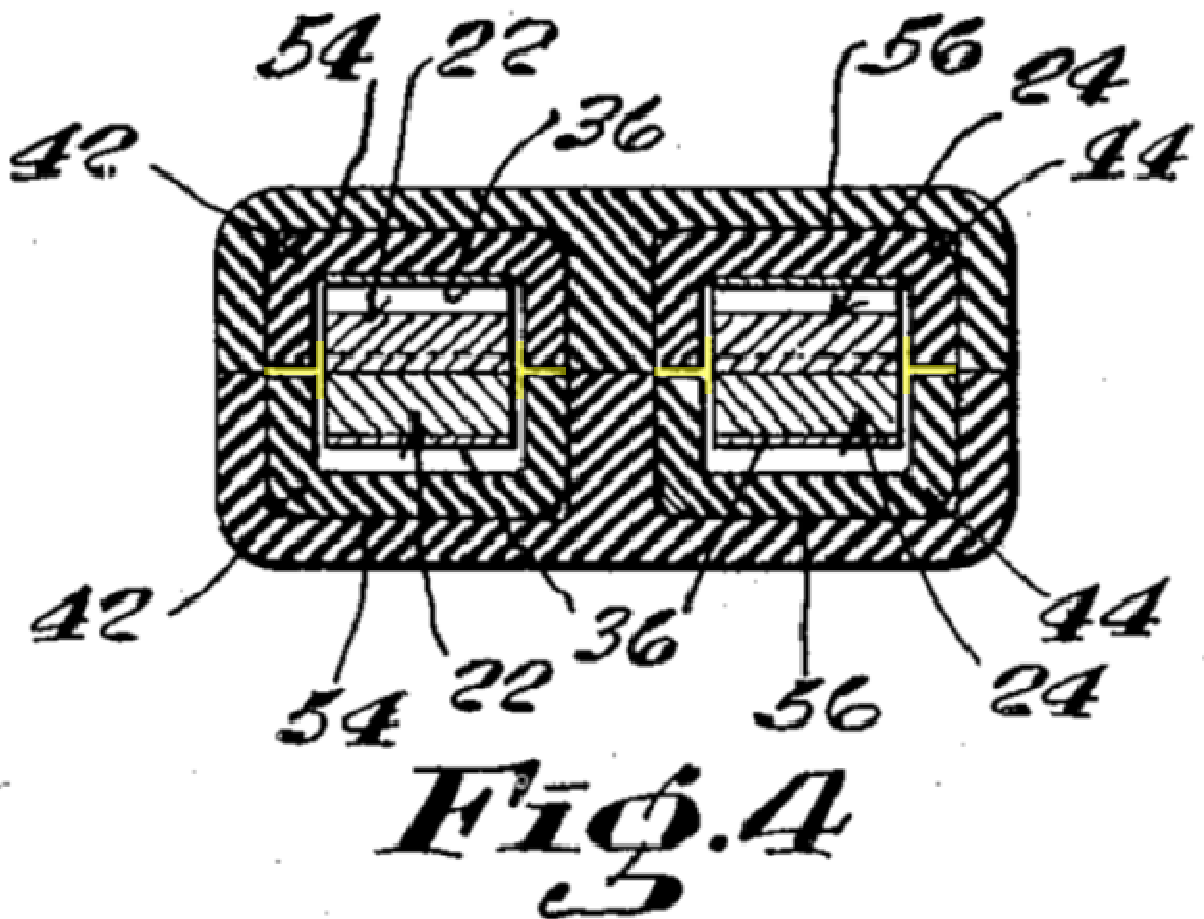
105. **Second**, Winkler does not disclose that when the alleged first and second connectors are partially disconnected, substantially all through-air arcing paths between the first and second electrical contacts are blocked. When the entirety of Winkler is considered, it is evident that Winkler does not disclose "blocking substantially all through-air arcing paths between the first and second electrical contacts," as Limitation 1[g] requires. Winkler discloses that electrical arcing between the first and second electrical contacts occurs when the first and second connectors are partially disconnected. (EX1004, Winkler, at 1:54-61, 3:40-47.) Winkler also discloses that this electrical arcing is so pervasive that it causes "pitting" of the electrical contacts, which caused Winkler to employ a "self-

cleaning” mechanism to address arc-induced pitting. (*Id.*) The Winkler passages discussing the presence of arcing in Winkler are reproduced below:

- “The present terminals are also adapted for self-cleaning during engagement and disengagement thereof and are shaped so that any pitting of the terminals caused by arcing at the extreme ends thereof during disengagement will not impair the efficiency of the terminals at the areas of contact in their engaged position.” (*Id.* at 1:54-61.)
- “From the above description it will be seen that in operation, any pitting of the terminals caused by arcing at the extreme ends thereof during disengagement will not impair the efficiency of the contacting surfaces when the terminals are in their fully engaged position, and that the sliding movement of the terminals against each other during engagement and disengagement will elect self-cleaning thereof.” (*Id.* at 3:40-47.)

106. Because there is electrical arcing in Winkler, Winkler does not disclose insulating barriers configured to “block[] substantially all through-air arcing paths between the first and second electrical contacts,” as Limitation 1[g] requires. A POSITA reading Winkler’s disclosure would have understood that Winkler discloses electrical arcing via through-air arcing paths between the first and second electrical contacts, as an electrical arc from one contact to another must follow an arcing “path” and air is the medium between the contacts. A POSITA also would have understood that Winkler’s alleged insulating barriers are not configured to block all (or substantially all) through-air arcing paths between the electrical contacts because Winkler discloses that electrical arcing occurs and is so pervasive as to cause “pitting” that must be addressed with a “self-cleaning” mechanism. (EX1004, Winkler, at 1:54-61, 3:40-47.)

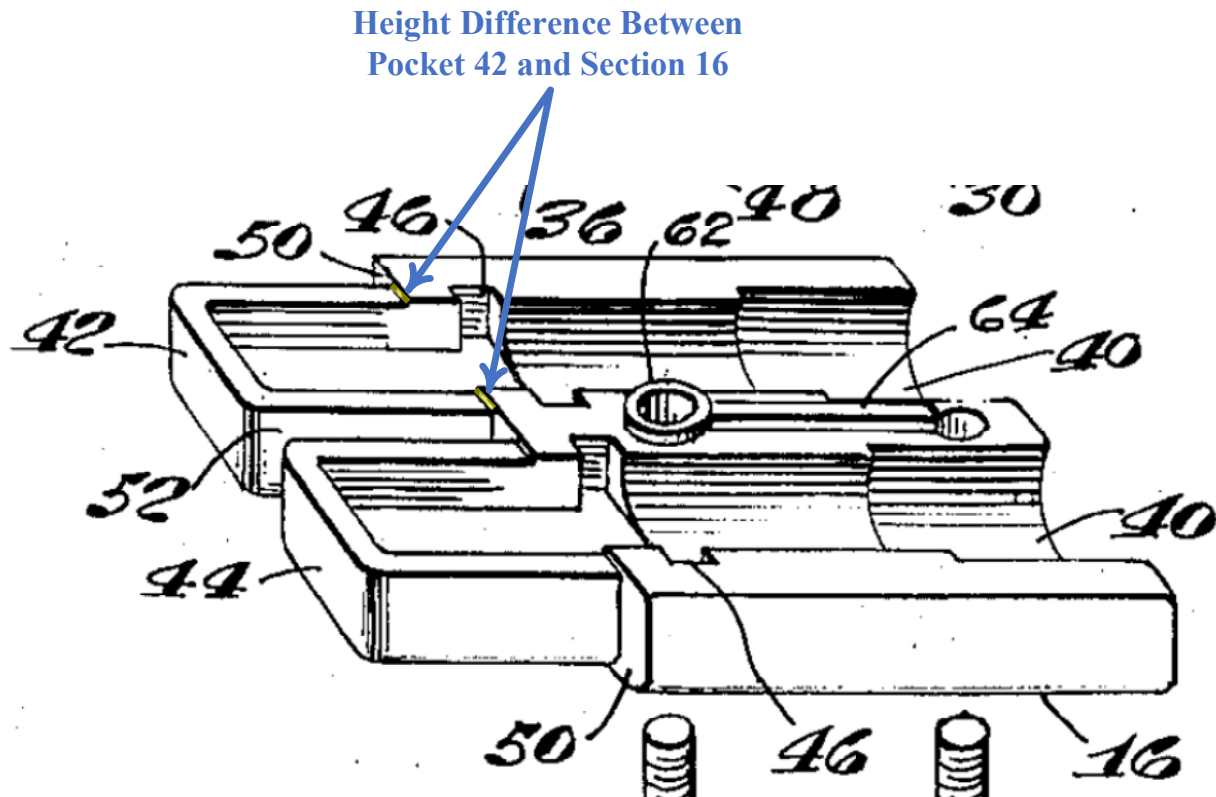
107. Winkler's figures also show that there *are* through-air arcing paths between Winkler's alleged insulating barriers and that Winkler's alleged insulating barriers do not fit snugly together. (EX1004, Winkler, at FIG. 4.) The through-air arcing paths between Winkler's alleged insulating barriers are clearly visible in yellow in Winkler's Figure 4, reproduced below:



(EX1004, Winkler, at FIG. 4 (annotated).)

108. As also shown in Winkler's Figure 3 below, there is an appreciable height difference between the pocket 42 of each connector (*i.e.*, the alleged

insulating barriers) and the rest of the lower half section 16 of each connector. This height difference creates paths between the alleged insulating barriers (shown in Figure 4 above) for through-air electrical arcing during connection and disconnection of the connectors 10, 12.



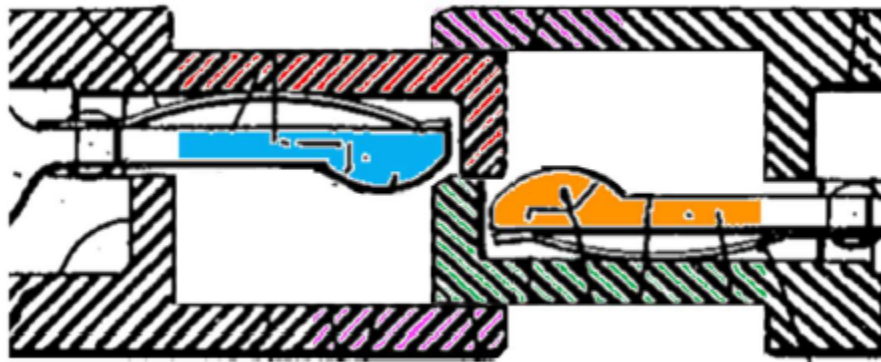
(EX1004, Winkler, at FIG. 3 (annotated).)

109. Petitioner's and Dr. Eldering's made-up annotated diagram is inconsistent with at least Figures 3 and 4 of Winkler and does not accurately represent what would be seen in the partially disconnected state.

2. Petitioner Has Failed To Show That Winkler Anticipates Challenged Claim 4: “The connector pair of claim 1, further comprising a barrier tensioning mechanism that presses the first and second insulating barriers against each other when the first and second connectors are partially disconnected and the first and second electrical contacts are separated by a short distance.”

110. Challenged Claim 4 recites: “The connector pair of claim 1, further comprising a barrier tensioning mechanism that presses the first and second insulating barriers against each other when the first and second connectors are partially disconnected and the first and second electrical contacts are separated by a short distance.” (EX1001, ‘017 patent, at claim 4.)

111. To show that Winkler anticipates Challenged Claim 4, Petitioner and Dr. Eldering rely on the made-up diagram reproduced below:



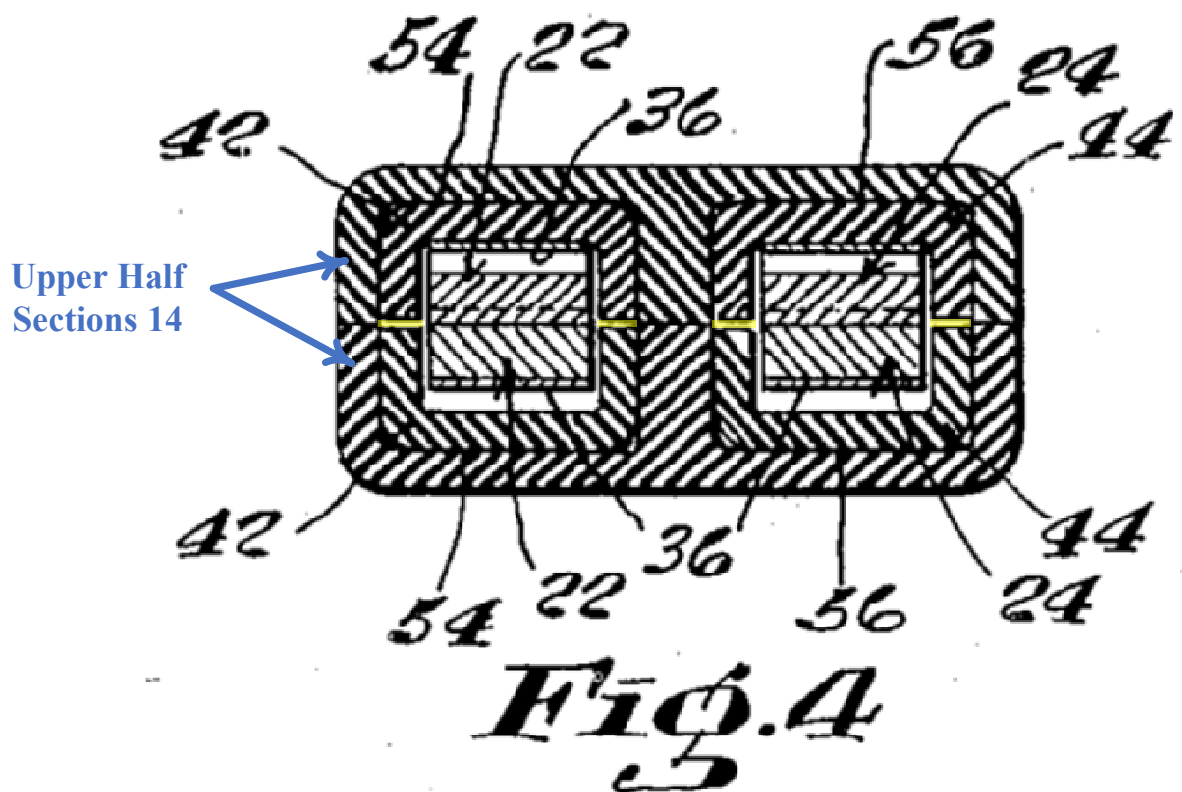
(Petition at 36-37; EX1003, Eldering Declaration, ¶¶ 88-89.)

112. Petitioner and Dr. Eldering assert that the “pink highlighted portions of each connector housing [in the diagram above] are barrier tensioning mechanisms

because they cause the first insulating barrier and the second insulating barrier to press against each other.” (Petition at 36-37; EX1003, Eldering Declaration, ¶ 89.)

113. I disagree with Petitioner and Dr. Eldering. The above diagram is not disclosed anywhere in Winkler. (*See generally* EX1004, Winkler.) I would never envisage this diagram from Winkler’s actual figures and disclosures and, as discussed earlier, the above diagram is inconsistent with Winkler’s actual figures and disclosures.

114. As discussed above, Winkler discloses that the alleged insulating barriers do not press against each other when the connectors 10, 12 are partially disconnected. Contrary to what Petitioner’s and Dr. Eldering’s made-up diagram depicts, Winkler’s Figure 4 shows that there is an appreciable gap between the pockets 42 (*i.e.*, the alleged insulating barriers). The pockets 42 cannot be pressed against each other if they are not even touching. As shown below, the only portions of the housings that physically press against each other are the opposing upper half sections 14:



(EX1004, Winkler, at FIG. 4 (annotated); *see also id.* at FIGS. 1-3.)

B. Ground 1B: Petitioner Has Failed To Show That Challenged Claim 7 Is Obvious Over Winkler In View Of Winkler2.

115. Challenged Claim 7 depends from Challenged Claim 1. As discussed above, Petitioner failed to show that Challenged Claim 1 is unpatentable in Ground 1A. For at least the same reasons, Petitioner has failed to show that Challenged Claim 7 is unpatentable in Ground 1B.

C. Ground 1C: Petitioner Has Failed To Show That Challenged Claims 8 And 10 Are Obvious Over Winkler In View Of The Handbook.

116. Challenged Claims 8 and 10 depend from Challenged Claim 1. As discussed above, Petitioner failed to show that Challenged Claim 1 is unpatentable

in Ground 1A. For at least the same reasons, Petitioner has failed to show that Challenged Claims 8 and 10 are unpatentable in Ground 1C. Petitioner has also failed to show that Challenged Claims 8 and 10 are obvious over Winkler in view of the Handbook for the additional reasons discussed below.

1. Petitioner Has Failed To Show That Challenged Claim 8 Is Obvious Over Winkler In View Of The Handbook.

117. Challenged Claim 8 recites: “The connector pair of claim 1, wherein at least one of the first and second electrical contacts includes a terminal for soldering to a printed circuit or wiring board.” (EX1001, ‘017 patent, at claim 8.)

118. Petitioner and Dr. Eldering assert that it would have been obvious to a POSITA to solder Winkler’s cylindrical end portion 30 to a board using the surface mount techniques disclosed in the Handbook. (Petition at 44-45; EX1003, Eldering Declaration, ¶¶ 105-106.) I disagree with Petitioner and Dr. Eldering.

119. Winkler’s electrical contacts require freedom of movement within the housing to effect engagement of the connectors 10, 12. (EX1004, Winkler, at 1:47-55 (“movably and yieldably mounting the terminals”); *id.* at 3:14-39 (“terminals movably supported therein”).) Without this freedom of movement, it would be difficult, if not impossible, to mate the connectors 10, 12. At the very least, the forces required to mate the connectors 10, 12 would be so high that it would likely damage the connectors.

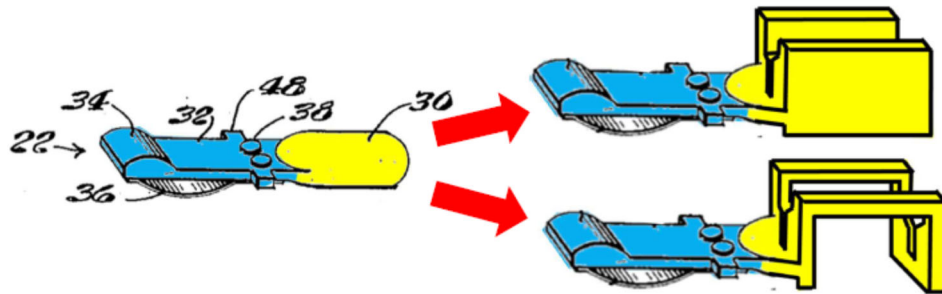
120. A POSITA would have recognized that soldering the cylindrical end portion 30 of one or more of Winkler's electrical contacts to a printed circuit or wiring board, as Petitioner and Dr. Eldering have proposed, would have interfered with, or altogether prevented, the freedom of movement of Winkler's electrical contacts. Recognizing that this freedom of movement is required to effect engagement of the connectors 10, 12, a POSITA would not have soldered Winkler's cylindrical end portion 30 to a board.

121. A POSITA also would have recognized that a solder joint is a fragile connecting element that needs to be isolated from movement, such as that resulting from electrical contact repositioning induced by mating Winkler's connectors together. A POSITA would have known that such movement would risk overstressing and breaking the delicate solder joint. For this additional reason, a POSITA would not have soldered Winkler's electrical contacts to a printed circuit or wiring board, as Petitioner and Dr. Eldering have proposed. For the same reasons discussed above, there also would not have been a reasonable expectation of success.

2. Petitioner Has Failed To Show That Challenged Claim 10 Is Obvious Over Winkler In View Of The Handbook.

122. Challenged Claim 10 recites: "The connector pair of claim 1, wherein at least one of the first and second electrical contacts includes a terminal using insulation displacement for attaching a wire to the contact." (EX1001, '017 patent, at claim 10.)

123. Petitioner and Dr. Eldering assert it would have been obvious to a POSITA to modify Winkler's contact member 22 in Winkler's electrical connectors 10 and 12 to use insulation displacement, as disclosed in the Handbook. (Petition at 50-51; EX1003, Eldering Declaration, ¶ 113.) Petitioner and Dr. Eldering state that the proposed modification “would have involved modifying or replacing cylindrical end portion 30 with an insulation displacement terminal to enable conductive coupling to a wire.” (*Id.*) Petitioner and Dr. Eldering provide the below annotated figure in support of their argument:



(*Id.*)

124. I disagree with Petitioner and Dr. Eldering. As discussed above, Winkler's electrical contacts require freedom of movement within the housing to effect engagement of the connectors 10, 12. (EX1004, Winkler, at 1:47-55 (“movably and yieldably mounting the terminals”); *id.* at 3:14-39 (“terminals movably supported therein”).) Without this freedom of movement, it would be difficult, if not impossible, to mate the connectors 10, 12. At the very least, the

forces required to mate the connectors 10, 12 would be so high that it would likely damage the connectors.

125. A POSITA would have recognized that modifying or replacing the cylindrical end portion 30 of Winkler's contact member 22 with an insulation displacement terminal, as Petitioner and Dr. Eldering have proposed, would have interfered with, or altogether prevented, the freedom of movement of Winkler's electrical contacts. Recognizing that this freedom of movement is required to effect engagement of the connectors 10, 12, a POSITA would not have modified or replaced the cylindrical end portion 30 of Winkler's contact member 22 with an insulation displacement terminal.

126. A POSITA would have also recognized that insulation displacement is ineffective when the wire inside the insulation displacement terminal moves around. As discussed above, Winkler's electrical contacts are intended to move to effect engagement of the connectors 10, 12. (EX1004, Winkler, at 1:47-55, 3:14-39.) Because movement of the electrical contacts would cause movement of the wire inside the insulation displacement terminal, a POSITA would have recognized that insulation displacement is inappropriate for Winkler's connectors 10, 12. For at least these reasons, there also would not have been a reasonable expectation of success.

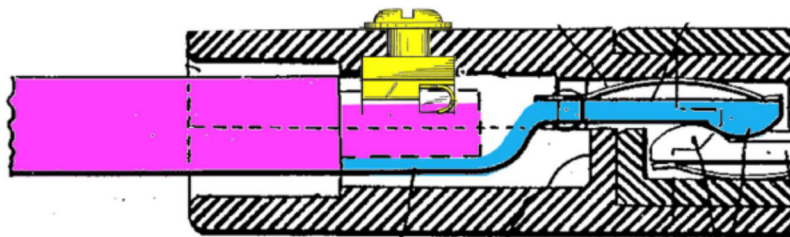
D. Ground 1D: Petitioner Has Failed To Show That Challenged Claims 11 And 12 Are Obvious Over Winkler In View Of Poliak.

127. Challenged Claims 11 and 12 depend from Challenged Claim 1. As discussed above, Petitioner failed to show that Challenged Claim 1 is unpatentable in Ground 1A. For at least the same reasons, Petitioner has failed to show that Challenged Claims 11 and 12 are unpatentable in Ground 1D. Petitioner has also failed to show that Challenged Claims 11 and 12 are obvious over Winkler in view of Poliak for the additional reasons discussed below.

1. Petitioner Has Failed To Show That Challenged Claim 11 Is Obvious Over Winkler In View Of Poliak.

128. Challenged Claim 11 recites: “The connector pair of claim 1, wherein at least one of the first and second electrical contacts includes a screw terminal for attaching a wire to the contact.” (EX1001, ‘017 patent, at claim 11.)

129. Petitioner and Dr. Eldering argue that “a POSITA would have found it obvious to modify at least one of the existing bolts 18 and nuts 20 in Winkler to include the carriage 60 of Poliak, to press Winkler’s cable 26 against contact member 22.” (Petition at 58-59; EX1003, Eldering Declaration, ¶ 124.) Petitioner and Dr. Eldering illustrate their proposed modification in the below annotated figure:

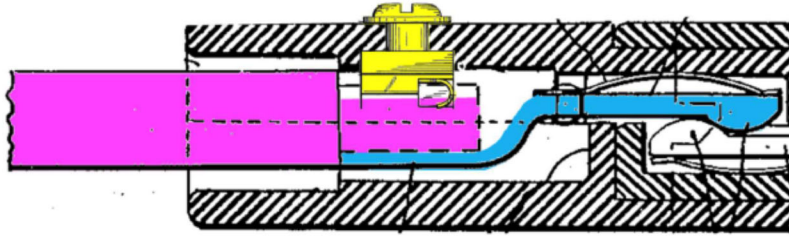


(*Id.*)

130. Petitioner and Dr. Eldering alternatively argue that “a POSITA would have found it obvious to modify Winkler’s connectors to incorporate Poliak’s carriage 60 and spring 90, and to add screw 62 and nut 64 of Poliak, thereby adding a third screw to Winkler’s connector.” (Petition at 59; EX1003, Eldering Declaration, ¶ 125.) According to Petitioner and Dr. Eldering, this alternative modification “would have looked similar to the cross-sectional diagram shown above, except that Winkler’s connector would include three screws...” (*Id.*)

131. Petitioner and Dr. Eldering have failed to show that Winkler in view of Poliak renders Challenged Claim 11 obvious because neither of their proposed modifications teaches what is claimed.

132. Challenged Claim 11 requires that “at least one of the first and second *electrical contacts includes a screw terminal* for attaching a wire to the contact.” (EX1001, ‘017 patent, at claim 11 (emphasis added).) In Petitioner’s and Dr. Eldering’s proposed modifications, however, neither of Winkler’s electrical contacts are modified to include a screw terminal, as Claim 11 requires. Rather, as shown in their own annotations below, Petitioner and Dr. Eldering propose modifying Winkler’s *housing* to include a screw terminal (shown in yellow) that presses a cable (shown in pink) against an electrical contact (shown in blue):



(Petition at 59.)

133. Petitioner's and Dr. Eldering's proposed modifications to Winkler fail to teach the additional limitations of Challenged Claim 11.

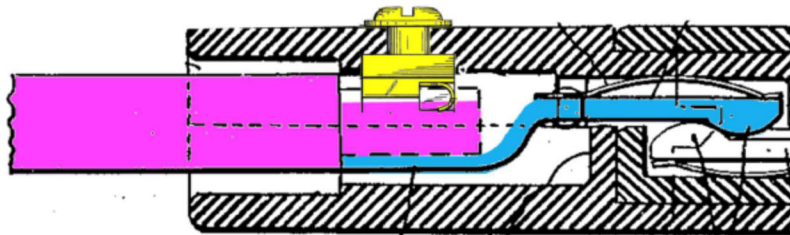
2. Petitioner Has Failed To Show That Challenged Claim 12 Is Obvious Over Winkler In View Of Poliak.

134. Challenged Claim 12 recites: "The connector pair of claim 1, wherein at least one of the first or second electrical contact is configured with a terminal using a spring mechanism for attaching at least one wire to the contact." (EX1001, '017 patent, at claim 12.)

135. Petitioner and Dr. Eldering, relying on their Challenged Claim 11 analysis, assert that Poliak's alleged screw terminal includes the claimed "spring mechanism for attaching at least one wire to the contact." (Petition at 61-62; EX1003, Eldering Declaration, ¶¶ 131-132.)

136. Petitioner and Dr. Eldering have failed to show that Winkler in view of Poliak renders Challenged Claim 12 obvious because their proposed modifications to Winkler fail to teach what is claimed.

137. Challenged Claim 12 requires that “at least one of the first or second *electrical contact is configured with a terminal using a spring mechanism* for attaching at least one wire to the contact.” (EX1001, ‘017 patent, at claim 12 (emphasis added).) In Petitioner’s and Dr. Eldering’s proposed modifications, however, neither of Winkler’s electrical contacts are configured with a terminal using a spring mechanism, as Claim 12 requires. Rather, as shown in their own annotations below, Petitioner and Dr. Eldering propose modifying Winkler’s *housing* to include a terminal with a spring mechanism (shown in yellow) that presses a cable (shown in pink) against an electrical contact (shown in blue):



(Petition at 59.)

138. Petitioner’s and Dr. Eldering’s proposed modifications to Winkler fail to teach the additional limitations of Challenged Claim 12.

E. Ground 2A: Petitioner Has Failed To Show That Kataoka Anticipates Challenged Claims 1-4.

1. Petitioner Has Failed To Show That Kataoka Anticipates Challenged Claim 1.

(a) Petitioner Has Failed To Show That Kataoka Discloses Limitation 1[d]: “a second connector having a second insulating housing.”

139. Limitation 1[d] recites: “a second connector having a second insulating housing.” (EX1001, ‘017 patent, at claim 1.)

140. Petitioner and Dr. Eldering assert that Kataoka’s housing 7 constitutes the claimed “second insulating housing” because housing 7 “surrounds the contact members and protects them from the environment.” (Petition at 70 (citing EX1005, Kataoka, at FIGS. 6A-B, 4:56-66, 10:19-29, 12:17-43); EX1003, Eldering Declaration, ¶ 142 (same).)

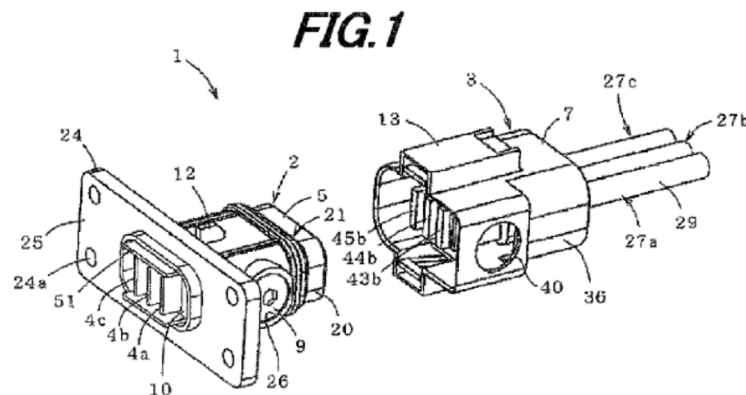
141. Petitioner and Dr. Eldering have failed to show that Kataoka discloses Limitation 1[d]. Any housing may surround an object. Likewise, any housing will provide some degree of environmental protection (*e.g.*, from wind, water, dust, the sun, etc.). A POSITA would not have concluded that Kataoka’s housing 7 is an “insulating housing” simply because it allegedly “surrounds the contact members and protects them from the environment,” as Petitioner and Dr. Eldering assert.

142. I understand that in the district court proceeding between the parties, Petitioner argued that the plain and ordinary meaning of “insulating” is “protecting.” This interpretation is incorrect. Any housing or barrier will provide some degree of

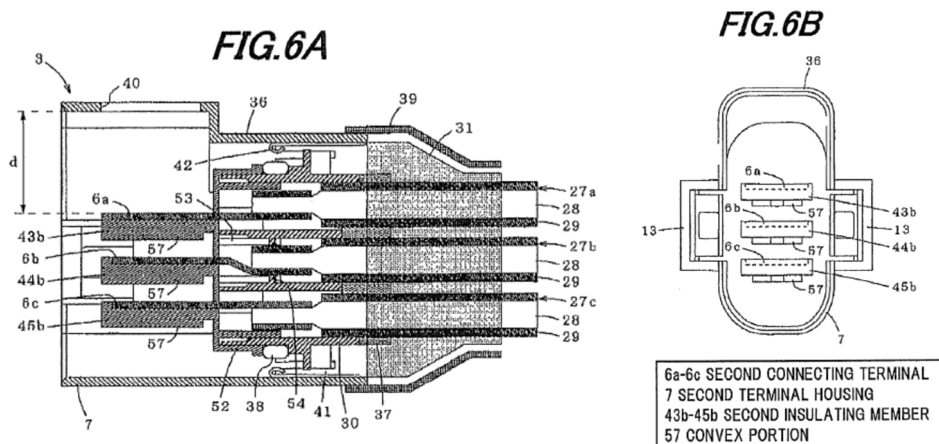
protection, such as physical protection, regardless of whether the housing or barrier is “insulating,” as claimed. Interpreting “insulating” as “protecting” would render the term “insulating” meaningless, which I understand is improper. As discussed above in the claim construction section, the correct interpretation of “insulating” to a POSITA is “electrically insulating.”

143. Nothing in the Petition or Dr. Eldering’s declaration demonstrates that Kataoka’s housing 7 is electrically insulating. (Petition at 68-70; EX1003, Eldering Declaration, ¶ 142.) Petitioner and Dr. Eldering also do not assert or opine that Kataoka’s housing 7 is electrically insulating. (*Id.*) The Petition and Dr. Eldering’s declaration are silent as to housing 7’s material properties. (*Id.*)

144. I have reviewed the portions of Kataoka cited in Petitioner’s and Dr. Eldering’s analysis of Limitation 1[d]. (Petition at 69-70 (citing EX1005, Kataoka, at FIG. 1, FIGS. 6A-B, 4:56-66, 10:19-29, 12:17-64); EX1003, Eldering Declaration, ¶ 142 (same).) The cited portions of Kataoka are reproduced below:



(EX1005, Kataoka, at FIG. 1.)



(*Id.* at FIGS. 6A-B.)

the second connector portion 3 having a second terminal housing 7 which houses plural (three) aligned second connecting terminals (female terminals) 6a-6c, plural insulators 8a-8d for insulating between contact points, and a connecting member 9 for collectively fixing and electrically connecting the plural first connecting terminals 4a-4c to the plural second connecting terminals 6a-6c at each contact point by pressing the insulator 8a adjacent thereto. In the connector 1, when the first terminal housing 5 of the first connector portion 2 is fitted to the second terminal housing 7 of the second connector portion 3...

(*Id.* at 4:56-66.)

As shown in FIG. 6, the second connector portion 3 has the second terminal housing 7 in which plural (three) aligned second connecting terminals (female terminals) 6a-6c are housed. Here, a connector portion on a side having female terminals is referred to as the second connector portion 3. In other words, as a terminal housing, the second terminal housing 7 may be either male (a male terminal housing) or female (a female terminal housing). The case where the second terminal housing 7 is a female terminal housing which corresponds to the first terminal housing 5 as a male terminal housing will be explained here.

(*Id.* at 10:19-29.)

Referring once again to FIG. 6, the second terminal housing 7 is composed of a hollow cylindrical body 36 having a substantially rectangular horizontal cross section. Since the first terminal housing 5 is fitted in the second terminal housing 7, an inner peripheral portion of the cylindrical body 36 on one side (on the left side in the drawing) to be fitted to the first terminal housing 5 is formed in a tapered shape in light of fitting properties to the first terminal housing 5. Meanwhile, a fixing guide portion 13, by which the rib 12 formed on the cylindrical body 20 composing the first terminal housing 5 is received and guided to be fitted and fixed, is formed on the outer peripheral portion of the cylindrical body 36. The first terminal housing 5 is housed in and fitted to the second terminal housing 7 while the rib 12 is guided by the fixing guide portion 13, which allows smooth fitting, firm fixation after the fitting and prevention of looseness in fitting due to vibration.

Alternatively, the second terminal housing 7 may be configured to be fixed in the first terminal housing 5 in an opposite manner. In this case, the inner peripheral portion of one end of the cylindrical body 20 composing the first terminal housing 5 is formed in a tapered shape, the outer peripheral portion of one end of the cylindrical body 36 composing the second terminal housing 7 is formed in a tapered shape, and the terminal housing waterproof structure 21 is formed on the outer peripheral portion of the one end of the cylindrical body 36.

The cable supporting member 30 having cables 27 *a*-27 *c* aligned and held therein is housed in the cylindrical body 36 on the other end side (on the right side in the drawing). A non-packing airtight portion 37 is formed on the cable supporting member 30 on a cable insertion side to prevent water from trickling down through the cables 27 *a*-27 *c* and entering into the second terminal housing 7. A packing 38 in contact with an inner peripheral surface of the first terminal housing 5 is provided between the cable supporting member 30 and the second inner housing 52 on the outer peripheral portion of the cable supporting member 30. That is, the connector 1 has a double waterproof structure composed of the packing 23 of the terminal housing waterproof structure 21 and the packing 38 provided on the outer peripheral portion of the cable supporting member 30.

Furthermore, the outer periphery of the cylindrical body 36 on the other end side from where the cables 27a-27c are led out is covered by a rubber boot 39 for preventing water from entering into the cylindrical body 36. It should be noted that the rubber boot 39 is not shown in FIGS. 1 and 2 for simplification.

(*Id.* at 12:17-64.)

145. As shown above, none of the portions of Kataoka cited in Petitioner's and Dr. Eldering's analysis of Limitation 1[d] disclose that Kataoka's housing 7 is electrically insulating. None of the portions of Kataoka cited in Petitioner's and Dr. Eldering's analysis of Limitation 1[d] disclose what material Kataoka's housing 7 is made of. Thus, the Petition and Dr. Eldering's declaration fail to show that Kataoka's housing 7 is electrically insulating.

(b) Petitioner Has Failed To Show That Kataoka Discloses Limitation 1[i]: “the second insulating barrier being configured so as to be in close proximity with the first insulating barrier when the first and second connectors are partially disconnected and the first and second electrical contacts are separated by a short distance, thereby blocking substantially all through-air arcing paths between the first and second electrical contacts.”

146. Limitation 1[i] recites: “the second insulating barrier being configured so as to be in close proximity with the first insulating barrier when the first and second connectors are partially disconnected and the first and second electrical contacts are separated by a short distance, thereby blocking substantially all through-

air arcing paths between the first and second electrical contacts.” (EX1001, ‘017 patent, at claim 1.)

147. Petitioner has failed to show that Kataoka discloses Limitation 1[i] for two reasons: (i) Petitioner and Dr. Eldering rely exclusively on a made-up diagram that does not disclose the recited elements of Limitation 1[i]; and (ii) Kataoka does not disclose that when the alleged first and second connectors are partially disconnected substantially all through-air arcing paths between the first and second electrical contacts are blocked.

148. **First**, Petitioner has failed to show that Kataoka discloses Limitation 1[i] because Petitioner and Dr. Eldering rely exclusively on a made-up diagram that does not disclose the recited elements of Limitation 1[i]. In their attempt to show that Kataoka discloses Limitation 1[i], Petitioner and Dr. Eldering rely on the diagram reproduced below:

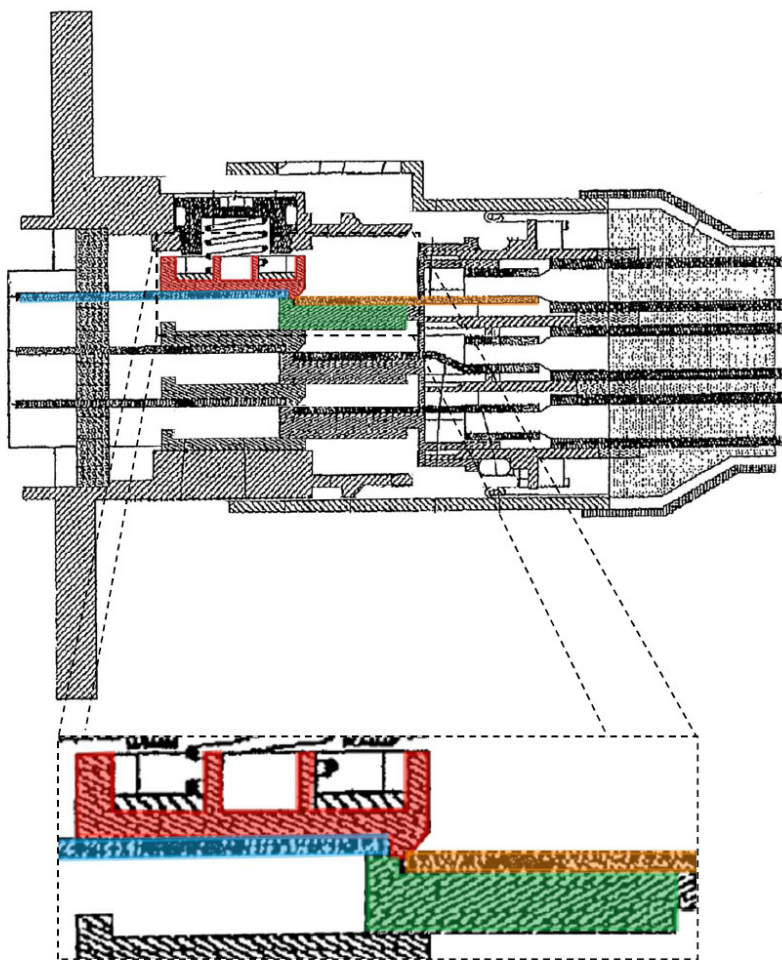


*Diagram created based on Ex. 1005, Fig. 3 (top), and enlarged portion (bottom) (showing a **first insulating barrier in red** and a **second insulating barrier in green** of a connector pair in a partially disconnected configuration, a **first electrical contact in blue**, and a **second electrical contact in orange**)*

(Petition at 82; EX1003, Eldering Declaration, ¶ 156.)

149. Petitioner and Dr. Eldering assert that the above made-up diagram shows that “the first insulating barrier and the second insulating barrier [depicted in red and green, respectively] ‘block[] substantially all through-air arcing paths between the first and second electrical contacts [depicted in blue and orange, respectively],’ ... because there is no air gap or other through-air arcing path

between the first insulating barrier and the second insulating barrier.” (Petition at 83; *see also* EX1003, Eldering Declaration, ¶ 156.) Petitioner and Dr. Eldering also assert that the above diagram is consistent with Kataoka’s disclosure that connector 1 is intended “to prevent unintentional contact and electrical shock to a foreign object such as a hand or finger of a worker, etc.” (EX1005, Kataoka, at 15:12-22; Petition at 83 (citing EX1005, Kataoka, at 15:12-22); EX1003, Eldering Declaration, ¶ 157 (same).)

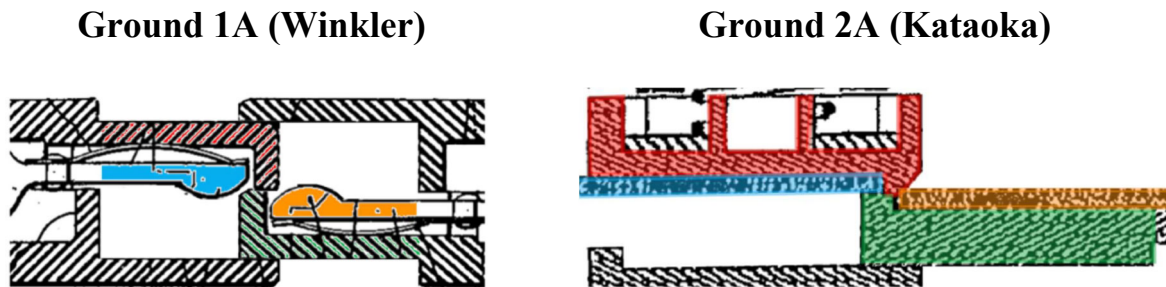
150. I disagree with Petitioner and Dr. Eldering. The above diagram is not disclosed anywhere in Kataoka. (*See generally* EX1005, Kataoka.) I would never envisage this diagram from Kataoka’s actual figures and disclosures and, as discussed below, the above diagram is inconsistent with Kataoka’s actual figures and disclosures.

151. Petitioner’s and Dr. Eldering’s diagram does not disclose “blocking substantially all through-air arcing paths between the first and second electrical contacts,” as claimed. The above diagram does not disclose anything about electrical arcing (or the lack thereof). The diagram is simply silent as to whether Kataoka’s alleged insulating barriers block any through-air arcing paths, let alone whether they block “substantially all through-air arcing paths,” as claimed. Indeed, electrical arcing is not mentioned anywhere in Kataoka. (*See generally* EX1005, Kataoka.)

152. Even if one were to assume the above diagram discloses blocking through-air arcing to some extent (it does not), Petitioner's and Dr. Eldering's diagram is at best ambiguous as to whether the alleged first and second insulating barriers are configured to "block substantially all through-air arcing paths" between the first and second electrical contacts, as Limitation 1[g] requires. Petitioner's and Dr. Eldering's diagram, which, again, does not appear anywhere in Kataoka, is a cross-sectional view of electrical connector pair 2, 3. The diagram depicts the arrangement of the alleged insulating barriers vis-à-vis the alleged electrical contacts at an unspecified location along the width of the electrical connector pair. The diagram does not disclose anything about the alleged insulating barriers or their arrangement at other locations along the width of the electrical connector pair. For example, the diagram is ambiguous as to whether there are through-air arcing paths at other locations along the width of the electrical connector pair. Further, the diagram is ambiguous as to whether there are indirect through-air arcing paths that may or may not be visible in the diagram or in any of Kataoka's other figures. Nothing in Kataoka resolves the ambiguity in Petitioner's favor. Again, Kataoka is simply silent as to whether electrical arcing can occur. (*See generally* EX1005, Kataoka.)

153. Winkler further emphasizes the ambiguity in Kataoka. In Grounds 1A and 2A, Petitioner and Dr. Eldering argue that nearly identical made-up cross-

sectional diagrams disclose “blocking substantially all through-air arcing paths between the first and second electrical contacts.” (Petition at 33, 82; EX1003, Eldering Declaration, ¶¶ 80-82, 156.) However, as Winkler’s disclosure confirms, one cannot assume that such made up cross-sectional diagrams disclose “blocking substantially all through-air arcing paths between the first and second electrical contacts,” as Petitioner and Dr. Eldering have incorrectly done. (EX1004, Winkler, at 1:54-61, 3:40-47.)



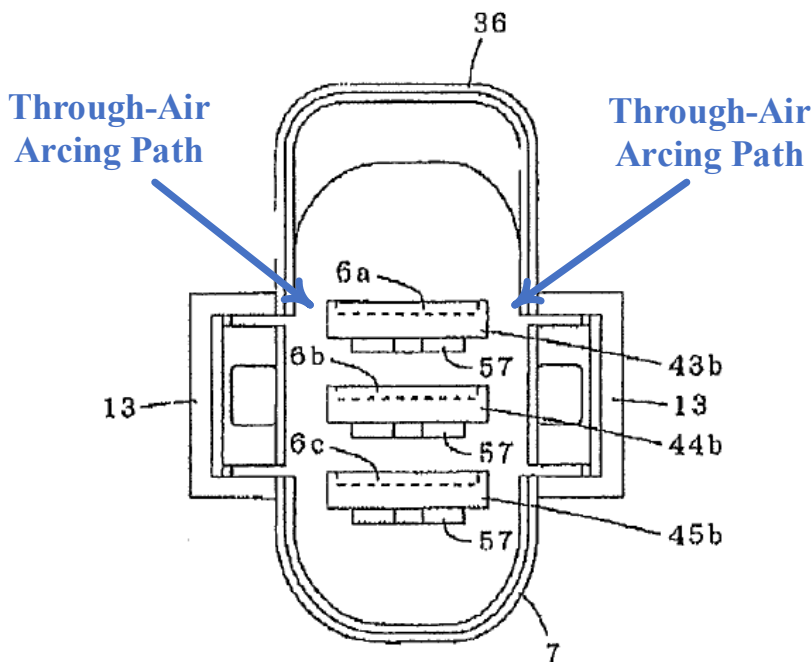
(Petition at 33, 82.)

154. Kataoka’s disclosure that connector 1 is intended “to prevent unintentional contact and electrical shock to a foreign object such as a hand or finger of a worker, etc.” does not help Petitioner and Dr. Eldering. (EX1005, Kataoka, at 15:12-22; Petition at 83 (citing EX1005, Kataoka, at 15:12-22); EX1003, Eldering Declaration, ¶ 157 (same).) Limitation 1[i] expressly recites that the first and second insulating barriers are configured to “block[] substantially all through-air arcing paths between the first and second electrical contacts.” (EX1001, ‘017 patent, at claim 1.) Preventing physical contact between an electrical contact and a hand or

finger is not the same thing as blocking through-air electrical arcing paths between the contacts. Through-air electrical arcing, as the name suggests, occurs through the air, not through physical contact with the electrical contact. That Kataoka's connector 1 is intended to prevent physical contact with a hand or finger is irrelevant to what is claimed and is merely a statement of intended purpose.

155. ***Second***, Petitioner has failed to show that Kataoka discloses Limitation 1[i] because Kataoka does not disclose that when the alleged first and second connectors are partially disconnected substantially all through-air arcing paths between the first and second electrical contacts are blocked. When the entirety of Kataoka is considered, it is evident that Kataoka does not disclose "blocking substantially all through-air arcing paths between the first and second electrical contacts," as Limitation 1[g] requires. For example, Kataoka's figures indicate that there are through-air arcing paths, such as around the sides of Kataoka's alleged insulating barriers. (*See, e.g.*, EX1005, Kataoka, at FIGS. 3, 4A-B, 5A-B, 6A-B.)

FIG. 6B



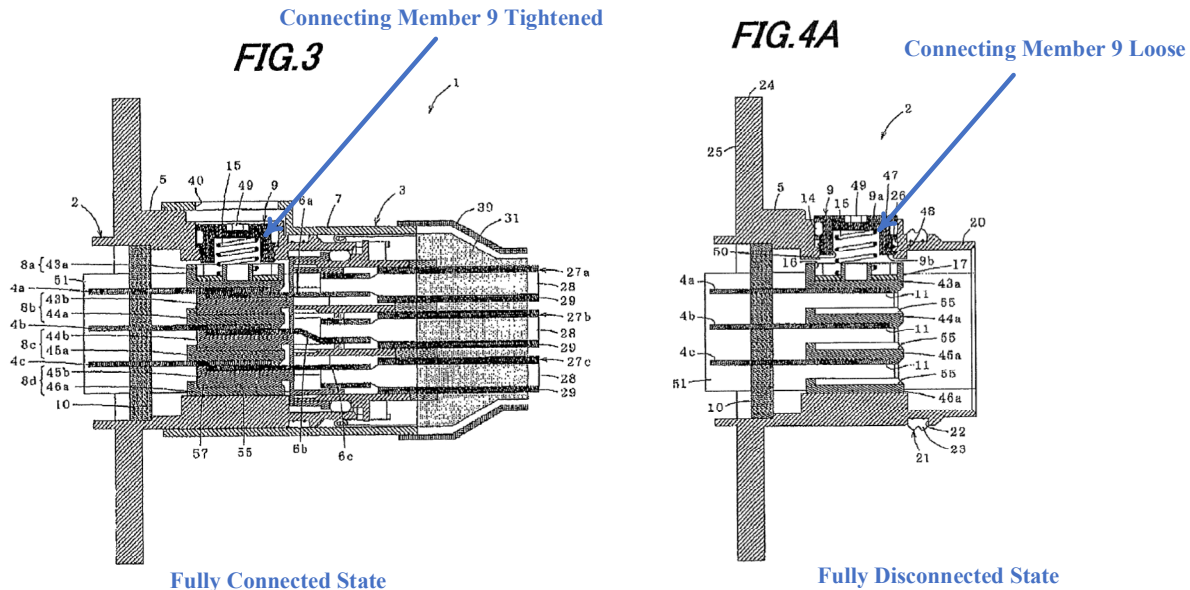
(*Id.* at FIG. 6B (annotated).)

156. Kataoka also teaches that, in the partially and fully disconnected states, there are “gaps” between insulating members 43a-46a of connector 2 to permit insertion of electrical contacts 6a-c of connector 3. (EX1005, Kataoka, at 13:40-45, 14:23-41, FIGS. 4A-B.) It is not until connectors 2, 3 are fully fitted together that connecting member 9 is tightened using a tool to press electrical contacts 4a-c of connector 2 against electrical contacts 6a-c of connector 3. (*Id.* at FIG. 3, 2:49-52, 3:22-26, 4:60-63, 6:9-14, 7:56-67, 8:10-12, 8:38-49, 14:49-65; *see also id.* at FIG. 4a (showing connecting member 9 not tightened).) Kataoka discloses that the gaps between insulating members 43a-46a allow connectors 2, 3 to be fitted together

without causing undesirable abrasion to the electrical contacts. (*Id.* at 2:13-35, 3:58-62, 15:7-11.) A POSITA would have understood that the gaps between insulators 8a-d create through-air arcing paths between the first and second electrical contacts of connectors 2, 3 in the partially disconnected state.

157. Petitioner's and Dr. Eldering's made-up annotated diagram does not accurately reflect Kataoka's connectors 2, 3 in the partially disconnected state. I understand that Petitioner's and Dr. Eldering's made-up annotated diagram is based on Kataoka Figure 3, which shows connectors 2, 3 fully fitted together and connecting member 9 tightened. (EX1005, Kataoka, at FIG. 3.) But, as noted above, Kataoka discloses that connecting member 9 is only tightened when connectors 2, 3 are fully fitted together. Contrary to what is shown in Petitioner's and Dr. Eldering's made-up annotated diagram, connecting member 9 is not tightened in the partially disconnected state. Petitioner's and Dr. Eldering's made-up annotated diagram simply does not represent what would be seen in the partially disconnected state.

158. A side-by-side comparison of Kataoka Figures 3 and 4A shows the increased space between insulating members 43a-46a when connecting member 9 is not tightened (as would be the case in the partially disconnected state):

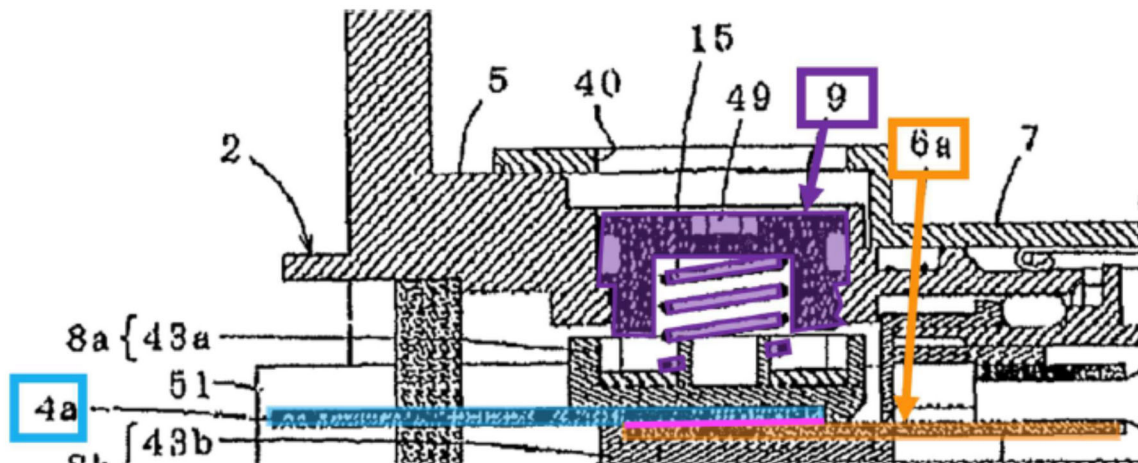


(EX1005, Kataoka, at FIGS. 3, 4A.)

2. **Petitioner Has Failed To Show That Kataoka Anticipates Challenged Claim 2: “The connector pair of claim 1, further comprising a contact tensioning mechanism that presses the second electrical contact against the engaging surface of the first electrical contact when the first and second connectors are connected.”**

159. Challenged Claim 2 recites: “The connector pair of claim 1, further comprising a contact tensioning mechanism that presses the second electrical contact against the engaging surface of the first electrical contact when the first and second connectors are connected.” (EX1001, ‘017 patent, at claim 2.)

160. Petitioner and Dr. Eldering assert that Kataoka’s connecting member 9 is the claimed “contact tensioning mechanism.” (Petition at 83-84; EX1003, Eldering Declaration, ¶¶ 159-161.) Petitioner and Dr. Eldering support their analysis of Challenged Claim 2 with the annotated figure reproduced below:



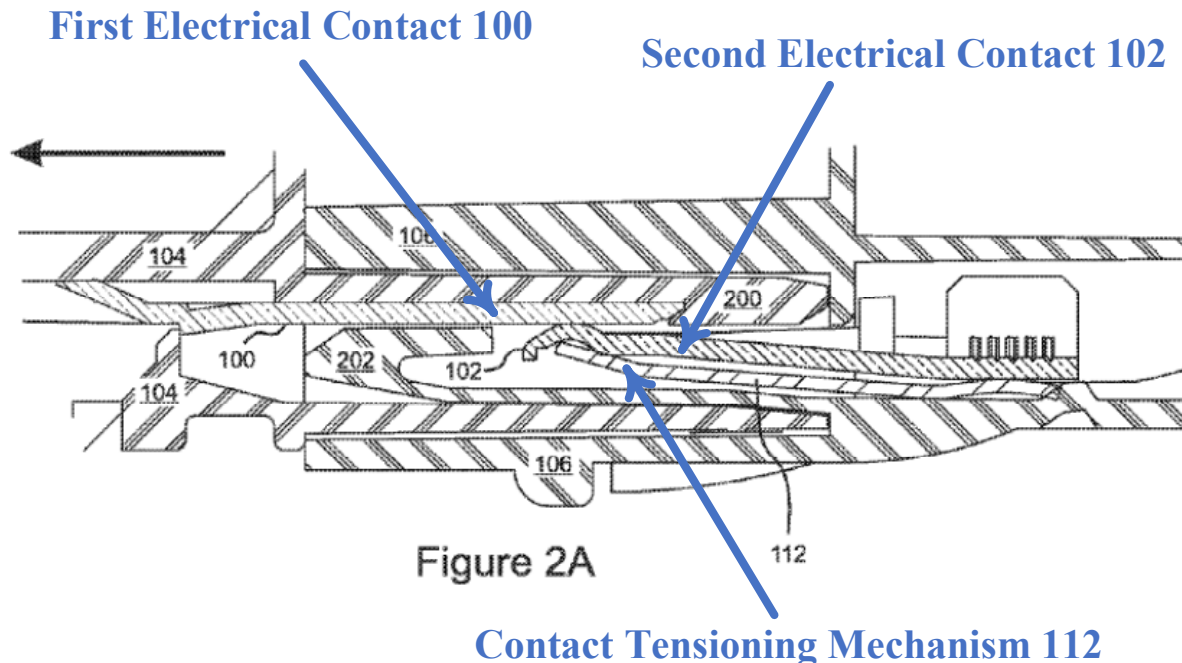
Ex. 1005, annotated portion of Fig. 3 (highlighting connecting member 9 in purple, first connecting terminal 4a in blue, and second connecting terminal 6a in orange, and indicating a connecting surface in pink)

(Petition at 84 (annotations in original); EX1003, Eldering Declaration, ¶ 159 (same).)

161. I disagree with Petitioner and Dr. Eldering that Kataoka’s connecting member 9 is the claimed “contact tensioning mechanism.” Challenged Claim 2 recites that the claimed contact tensioning mechanism “presses the second electrical contact against the engaging surface of the first electrical contact.” (EX1001, ‘017 patent, at claim 2.) However, Kataoka’s connecting member 9 (*i.e.*, the alleged “contact tensioning mechanism”) does the opposite of what is claimed. As shown above, Kataoka’s connecting member 9 presses the first electrical contact (shown in blue) against the engaging surface of the second electrical contact (shown in orange). (EX1005, Kataoka, at FIG. 3.)

162. While Petitioner and Dr. Eldering point to Newton's 3rd law in their Challenged Claim 2 analysis, Newton's 3rd law does not help Petitioner. (Petition at 84; EX1003, Eldering Declaration, ¶ 160.) Newton's 3rd law states that when one object exerts a force on another object, the second object exerts an equal force back on the first object. Thus, according to Newton's 3rd law, when Kataoka's first electrical contact exerts a force downward on Kataoka's second electrical contact, Kataoka's second electrical contact exerts an equal force back upward on Kataoka's first electrical contact. But Challenged Claim 2 does not recite that the second electrical contact exerts a force on the first electrical contact. (EX1001, '017 patent, at claim 2.) Rather, Challenged Claim 2 recites that the "contact tensioning mechanism [] presses the second electrical contact against the engaging surface of the first electrical contact." (*Id.*)

163. The '017 patent further confirms that Petitioner and Dr. Eldering have failed to show that Kataoka anticipates Challenged Claim 2. As shown below, the '017 patent discloses a contact tensioning mechanism 112 that presses the second electrical contact 102 upward against the first electrical contact 100:



(EX1001, '017 patent, at FIG. 2A (annotated); *see also id.* at 2:62-3:2, 3:10-12.)

164. As discussed above, Kataoka's connecting member 9 (*i.e.*, the alleged "contact tensioning mechanism") does the opposite of what is claimed and described in the '017 patent. Kataoka's connecting member 9 presses the alleged first electrical contact against the second electrical contact. (EX1005, Kataoka, at FIG. 3.) Kataoka does not anticipate Challenged Claim 2 for this additional reason.

3. Petitioner Has Failed To Show That Kataoka Anticipates Challenged Claim 3: "The connector pair of claim 2, wherein the contact tensioning mechanism includes a spring."

165. Challenged Claim 3 recites: "The connector pair of claim 2, wherein the contact tensioning mechanism includes a spring." (EX1001, '017 patent, at claim 3.)

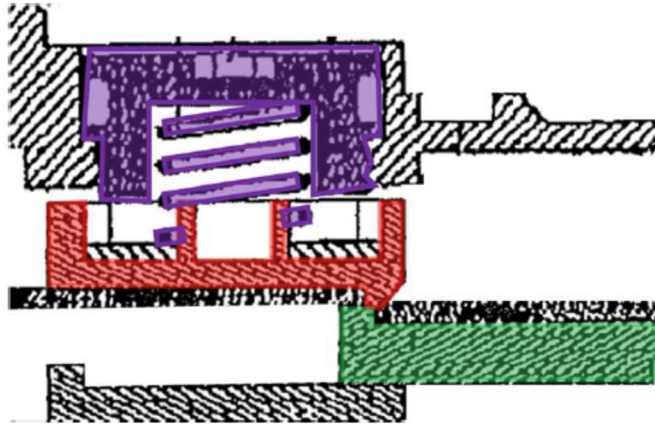
166. As discussed above, Petitioner and Dr. Eldering have failed to show that Kataoka discloses the claimed “contact tensioning mechanism” of Challenged Claim 2. Thus, for at least the same reasons discussed above with respect to Challenged Claim 2, Petitioner and Dr. Eldering have failed to show that Kataoka anticipates Challenged Claim 3.

4. Petitioner Has Failed To Show That Kataoka Anticipates Challenged Claim 4: “The connector pair of claim 1, further comprising a barrier tensioning mechanism that presses the first and second insulating barriers against each other when the first and second connectors are partially disconnected and the first and second electrical contacts are separated by a short distance.”

167. Challenged Claim 4 recites: “The connector pair of claim 1, further comprising a barrier tensioning mechanism that presses the first and second insulating barriers against each other when the first and second connectors are partially disconnected and the first and second electrical contacts are separated by a short distance.” (EX1001, ‘017 patent, at claim 4.)

168. Petitioner and Dr. Eldering assert that Kataoka’s connecting member 9 is the claimed “barrier tensioning mechanism.” (Petition at 86; EX1003, Eldering Declaration, ¶ 164.) According to Petitioner and Dr. Eldering, Kataoka’s connecting member 9 presses insulating member 43a (*i.e.*, the alleged “first insulating barrier”) against insulating member 43b (*i.e.*, the alleged “second insulating barrier”).

(Petition at 85-86; EX1003, Eldering Declaration, ¶ 163.) Petitioner and Dr. Eldering support their argument with the following made-up annotated diagram:



(*Id.*)

169. The above diagram is not disclosed anywhere in Kataoka. (*See generally* EX1005, Kataoka.) I would never envisage this diagram from Kataoka’s actual figures and disclosures and, as I discussed earlier, the above diagram is inconsistent with Kataoka’s actual figures and disclosures.

170. I disagree with Petitioner and Dr. Eldering that Kataoka’s connecting member 9 is the claimed “barrier tensioning mechanism.” Challenged Claim 4 recites that the claimed barrier tensioning mechanism “presses the first and second insulating barriers against each other when the first and second connectors are partially disconnected.” (EX1001, ‘017 patent, at claim 4.)

171. As discussed above with respect to Limitation 1[i], Kataoka’s connecting member 9 does not press the alleged first and second insulating barriers

against each other when the connectors 2, 3 are partially disconnected. (EX1005, Kataoka, at FIGS. 3 and 4A, 2:49-52, 3:22-26, 4:60-63, 6:9-14, 7:56-67, 8:10-12, 8:38-49, 14:49-65.) Kataoka's connecting member 9 is tightened only when the connectors 2, 3 are fully fitted together. (*Id.*) And when Kataoka's connecting member 9 is tightened, the electrical contacts of the connectors 2, 3 are pressed against each other, not the alleged first and second insulating barriers. (*Id.*)

F. Ground 2B: Petitioner Has Failed To Show That Challenged Claims 7-10 Are Obvious Over Kataoka In View Of The Handbook.

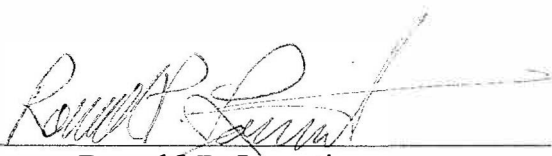
172. Challenged Claims 7-10 depend from Challenged Claim 1. As discussed above, Petitioner failed to show that Challenged Claim 1 is unpatentable in Ground 2A. For at least the same reasons, Petitioner has failed to show that Challenged Claims 7-10 are unpatentable in Ground 2B.

XI. CONCLUSIONS

- The Challenged Claims of the '017 patent are valid, patentable, and not anticipated or obvious.
- The Challenged Claims of the '017 patent were properly issued by the Patent and Trademark Office.

I have prepared this Declaration based upon my review of the materials referenced, and my own personal knowledge, education, skill and experience. I declare, under penalty of perjury under the laws of the United States of America, that the foregoing is true and correct.

Dated: March 7, 2025



Ronald P. Locati

EXHIBIT 1

RONALD P. LOCATI

Curriculum Vitae



Independent Consultant -- Electromechanical Devices and Connectors

(717) 887-3761 Mobile

(717) 767-2547 Direct

rlocati1@comcast.net

GENERAL BACKGROUND AND AREAS OF EXPERTISE

Substantive (45 years) electromechanical experience, directly with connector manufacturers and as an independent consultant to the electrical / electronics industry.

With an emphasis on new products, design fundamentals, diagnostics, and patents, I have strong expertise in project management, business negotiations, and marketing. One of my specialized skill sets includes litigation support - I occasionally serve as expert witness to companies involved in patent infringement / validity (PTAB) and ITC Section 337 cases.

Proficient in cost-effective design, a focus on value identification and efficiency gains, and the engineering of product designs to achieve market needs. Extensive technical expertise in new product development, patents, failure investigation, reverse engineering, electrical contact reliability, precision mechanisms and electromechanical devices, and piece-part manufacturing processes and technologies. I possess a demonstrated strategic business acumen as well as a command of project management, patent interpretation, training, concept ideation, technical writing / communications, and failure diagnostics. I am frequently enlisted to apply my expertise by companies operating in a variety of industries:

Medical Devices / Wearables / Sensors / White Goods / Electrical Appliances / Cameras / Industrial / Automation / RF / Cable Television / Defense / Aviation / Consumer Products / Power Tools / Fiber / Data / Telecommunications / Telephony / Electric Vehicles / Charging / Automotive / Off-Highway / Heavy Equipment / Industrial / Control System / Sport / Toy / Gaming / PC / Mobile Devices / Supercomputers / Structural Wiring / Wiring Harness / Conductor Cabling / Network / Storage / Server / Lighting / Solar / Utility Power / Switches

EMPLOYMENT HISTORY AND PROFESSIONAL EXPERIENCE

APEX Electrical Interconnection Consultants, LLC

Harrisburg, PA

2018 to Present	<i>Senior Consultant</i>
2005 to 2018	<i>Partner and Principal Consultant</i>
2002 to 2005	<i>Consultant</i>

Vice President of APEX 2006-2011, President of APEX 2011-2016.
[www.connectorconsultants.com]

Advise clients and provide detailed design recommendations, develop and provide training, with a focus on the operating principles of connectors and related electromechanical devices. I am frequently engaged in diagnosing failures, determining fitness for purpose, and developing reliability test regimens. I offer a creative approach to new concepts, devices, and features, benchmark competitive products and apprise fitness for purpose, coordinate predictive and diagnostic mechanical and electrical analyses, prototype fabrication, and performance testing, write clear, concise technical reports, and efficiently manage project timelines, budgets, and cross-channel communications. I am experienced in high-power, conventional signal, and high-speed electrical connectors, encompassing mechanical design, materials and surface finishes, degradation mechanisms, end-of-life factors, and design for manufacturability. I engage with clients in industrial, medical device, transportation, power tool, heating / lighting, commercial appliance, communications, consumer product, military, wiring device, and other areas.

Stewart Connector Systems

Glen Rock, PA

[Formerly an operating unit of Insilco Technologies; acquired by Bel Fuse]

2000-2002	<i>Vice President, Product + Process Engineering</i>
1997-2000	<i>Director, Product Design and Development</i>

Accountable for the engineering, design, and performance of modular jacks and plug connectors used in Category 3, 5, and 6 telecommunication equipment. Directly supervised and worked with engineers designing, analyzing, and testing connectors, as well as personnel engaged in designing production tooling for new high-speed connectors. Responsible for new product development, standards reliability assurance, and component ease of use and cost effectiveness. Initiated the startup of international supply partners for metal stamping dies and plastic injection molds for connector components. Coordinated filing / prosecuting new patents, maintained high-level communication and collaboration with internal divisions and external business partners, negotiated technology licensing agreements, and aided in conducting due diligence of potential acquisitions.

LRC Electronics

Horseheads, NY

[Formerly an operating unit of Augat, Inc., acquired by Thomas & Betts, then Belden, Inc.]

1994-1997

Engineering Director

Responsible for the design, development, specifications, and technical performance of high-frequency RF coaxial connectors and passive cable-TV devices. Direct oversight of staff accountable for product designs, materials, prototyping, performance testing, and documentation including product specifications, detail drawings, patents, product installation specs, and supporting technical papers. Served as technology liaison between company divisions and external customers that construct and maintain commercial CATV systems. Invented and developed new coaxial interconnection products, benchmarked competitive products via analysis and testing, and drafted patent applications for new products. Designed and engineered new interconnect products for outdoor trunk / distribution cable systems, and drop-line / indoor coax cable TV applications. Products incorporated labor-saving, ease-of-service, high performance, rapid install, and cost effective features. Directly supervised and worked with a 24-person engineering team. Concurrently responsible for equipment purchases to support product design, document control, electromechanical performance simulation, verification and validation testing, and machining of prototype components.

AMP Incorporated

Harrisburg, PA

[Acquired by Tyco Electronics; the operating unit was since renamed as TE Connectivity]

1991-1994

Team Leader - Advanced Development - Corporate R&D

High-speed interconnect design for supercomputer applications

1988-1991

Project Team Lead - Custom Products Design

Mass-termination insulation-displacement (IDC) connectors

1986-1988

Associate Product Manager

Customer liaison - wire and printed circuit applied connectors

1983-1986

Development Engineer

Design of small form-factor wire and PCB connector products

1979-1983

Product Engineer

Technical support of connectors & application tooling

Responsible for the design of new electrical connectors, and the application tooling, performance, cost effectiveness, quality, and manufacturability of existing connectors, with a strong emphasis on performance reliability, advanced development, and design-for-manufacturability for a range of customer applications. Facilitated customer understanding of specific connectors as applied in particular end products across diverse applications. Demonstrated strengths in project management, marketing / business development, communication and customer liaison, and cross-functional team leadership. Named inventor on multiple patents for new product configurations; implemented numerous manufacturing cost reductions and reliability enhancements, and regularly diagnosed and resolved performance, application, and other technical issues.

United States Steel Corporation (Irving Works)

Pittsburgh, PA

1979

Supervising Foreman

Directly supervised electricians, mechanics, and other skilled trade personnel responsible for maintaining targeted uptime and performance levels of large-scale rolling mills, annealing furnaces, chemical plating / finishing lines, and related manufacturing process equipment used in the production of finished rolled-steel and sheet products.

Westinghouse Electric Corporation (Advanced Energy Systems) Pittsburgh, PA

1978

Test Engineer

Participated in the planning, fixture design, setup, instrumentation, execution, data acquisition, and report writing relating to earthquake sustainability testing of large-scale nuclear power electrical generation apparatus (generators, turbines, transmissions, and related mechanical structures) while under simulated operating conditions.

FMC Corporation (Syntron Division)

Homer City, PA

1977

Maintenance Technician

Performed hands-on maintenance and repair of production machinery and electrical equipment used in the manufacture of automated material handling equipment, including part / bowl feeders and related mechanisms, support structures, and conveying devices.

FORMAL EDUCATION

University of Pittsburgh
Johnstown, PA

B.S. Mechanical Engineering
BSME 1979

Shippensburg University
Shippensburg, PA

Masters of Business Administration
Partial Curriculum 1985-1987

PROFESSIONAL DEVELOPMENT

Leadership, Motivation, Decision
Making Glastonbury, CT

Psychology and Impact of Decisions
Certificate, 1995

Center For Creative Leadership
Greensboro, NC

Leadership Development Program
Week Long Immersion Experience
Certificate, 1996

Pennsylvania State University
State College, PA

Leadership in Project Management
Certificate, 2000

AMP Incorporated
Harrisburg, PA

27 Product Design, Manufacturing Technology,
and Strategic Business Courses

PUBLICATIONS

>> ARTICLES and WHITE PAPERS

"Contact Interfaces - How They Work" (2021, co-author, APEX)

"Patent Litigation - Concerns and Considerations" (2016, author, ConnectorSupplier.com)

"The Importance of Contact / Housing Retention" (2015, co-author, Connector Supplier)

"Does Today's Connector Industry Lack Experts?" (2014, author, ConnectorSupplier.com)

>> PATENTS

I AM NAMED INVENTOR ON THIRTY-FOUR ISSUED U.S. PATENTS:

9660401	Suspended Ceiling Grid Adapter
9543721	Connectors for Electrically Active Grid
8740636	Connectors for Electrically Active Grid
<u>7997910</u>	Connectors for Electrically Active Grid
6676423	Modular Electrical Connector Assembly Providing Electrostatic Discharge
6554638	Modular Electrical Connector Assemblies with Magnetic Filter
6428361	Surface Mountable Connector Assembly with Printed Circuit Board
6419526	High Frequency Bi-Level Offset Multi-Port Jack
6409535	Modular Plug and Cable Assembly
6402559	Modular Plug, Cable Assembly, Load Bar and Terminal Blade
6398591	Modular Jack for Tubular Enclosures
6267628	High Frequency Multi-Port Multi-Level Jack Assembly
6217391	Low Profile Jack and Communications Card
<u>6193542</u>	Modular Plug and Cable Assembly
6179667	High Frequency Connector with Contact Securing Insert
6089912	Post-Less Coaxial Cable Connector
6039609	Power Inserter Connector
5904596	Cable Terminator
5807117	Printed Circuit Board to Housing Interconnect System
5800211	Snap Together CATV Connector for Indoor Use
5769662	Snap Together Coaxial Connector for Polyethylene Jacket
5651698	Coaxial Cable Connector
5368491	High Density Electrical Connector
<u>5322461</u>	Electrical Connector with Posts Having Improved Tip Geometry
5240442	Electrical Connector with Posts Having Improved Tip Geometry
5161996	Header Assembly and Alignment Assist Shroud Therefor
5147225	Shroud-to-Board Polarization and Keying System
5129831	Right Angle Header Shroud Polarization and Keying System
5125850	Strain Relief for an Electrical Connector
5122079	Multiple Conductor Cable Connector with Towers
5064383	Multiple Conductor Cable Connector with Clip and Towers
5037323	Header Assembly and Alignment Assist Shroud Therefor
4685761	Electrical Contact Assembly and Method of Assembly
4509258	Connector Centering Device and Method for Using

(Note: Foreign filings / pending applications are not shown)

LITIGATION RELATED EXPERIENCE

I support either plaintiffs or defendants engaged in patent litigation as an expert witness. I investigate the technical merits of products and designs, interpret patent claims, write opinions concerning infringement, validity, and other topics (expert reports / declarations), and provide testimony in deposition and at trial. Venues include the U.S. Federal court system, the U.S. International Trade Commission (ITC Section 337 cases), various district courts, and the U.S. Patent and Trademark Office (PTAB-IPR's).

>> SUMMARY STATISTICS

31	Number of cases supported
20	Number of times participating on behalf of a defendant
11	Number of times participating on behalf of a plaintiff
42	Number of written expert reports and declarations
14	Number of times having testified in deposition
4	Number of times having testified at trial
37	Number of patents that were involved in cases
24	Number of cases involving patents
18	Number of different law firms having worked with
17	Number of cases brought before U.S. Federal / District courts
8	Number of cases at the U.S. Patent and Trademark Office (USPTO)
5	Number of Section 337 cases at the U.S. International Trade Commission (ITC)

>> DETAILED CASE LISTING

Belden, Inc. v. **CommScope, Inc. et al.** Case No. 1:22-cv-00783-RGA (District of Delaware) Carlson, Caspers, Vandenburg and Lindquist, P.A. (Minneapolis, MN). Consulting (October 2023 to Present) with respect to litigation over certain Category 6 cable products

Belden, Inc. v. **CommScope, Inc. et al.** Case No. 1:22-cv-00782-RGA (District of Delaware) Carlson, Caspers, Vandenburg and Lindquist, P.A. (Minneapolis, MN). Consulting (October 2023 to Present) with respect to litigation over certain Category 6 modular jack products

Shoals Technologies Group, LLC before the United States International Trade Commission (Washington, D.C.), re: Hikam America, Inc. et al, Investigation No. 337-TA-1365 Charles Barquist (Los Angeles, CA) and Kirk Harris (Salt Lake City, UT) both of Maschoff Brennan. Consulting (June 2023 to January 2024) with respect to litigation over certain electrical wiring products including patents 10,553,739 and 10,992,254

Amphenol Corporation v. Luxshare Precision Industry Co., Ltd. et al before the United States International Trade Commission (Washington, D.C.), re: Certain Electrical Connectors and Cages, Components Thereof, and Products Containing the Same, Investigation No. 337-TA-1241. Gregory Corbett, Libbie DiMarco, and Charles Steenburg, all of Wolf, Greenfield & Sacks, P.C. (Boston, MA). Filed a Markman declaration (June 2021), an expert report (September 2021), and a witness statement (October 2021); testified at deposition (July 2021) and at trial (November 2021) in a patent infringement case involving electrical connector patents 7371117, 9705255, and 10381767

Carrio Cabling Corporation vs. **Stryker Corporation and John Doe**, Civil Action Number 19-cv-01937-RM-KMT (United States District Court, District of Colorado) D. Andrew Portinga (Grand Rapids, MI) of Miller Johnson. Filed an expert report (September 2021) in a trade secrets case involving various cable assemblies. The parties reached settlement prior to trial in November 2021

I-Pee Holdings, LLC v. Virginia Toy and Novelty Company, Civil Action Number 1:18-cv-01564-AJT-TCB (United States District Court, Eastern District of Virginia, Alexandria Division) Jonathan Lagarenne (Denver, CO), Christopher Kinkade (Princeton, NJ), and Ryan Miller (Philadelphia, PA), all of Fox Rothschild LLP. Filed expert reports and declarations (June, July, and August 2019) and testified at deposition (August 2019) in a patent infringement case involving electrical light string patent 10064461

J.S.T. Corporation v. **Robert Bosch LLC et al**, Civil Action Number 2:15-cv-13842-AC-EAS (United States District Court, Eastern District of Michigan, Southern Division) David Soofian (New York, N.Y.) and Dina Hayes (Chicago, IL), both of Arnold & Porter Kaye Scholer LLP. Researched technical aspects (2018) of a misappropriation of trade secrets case involving an automotive electrical connector

3M Company before the United States International Trade Commission (Washington, D.C.), re: **Amphenol Corporation et al**, Investigation No. 337-TA-1064 and parallel Civil Action Number 1:17-cv-00360-MPT (United States District Court, District of Delaware) Stephen O'Donohue (New York, NY), Lesley Hamming (Chicago, IL), Charles Sanders (Boston, MA), and Anant Saraswat (Boston, MA), all of Latham & Watkins LLP Filed expert reports (December 2017 and January 2018) and testified at deposition (January 2018) in a patent infringement case involving electrical shielded cable patents 8933333, 9601236, and 9627106

J.S.T. Corporation before the United States International Trade Commission (Washington, D.C.), re: **Robert Bosch GmbH et al**, Investigation No. 337-TA-1043 Bas de Blank (Menlo Park, CA), Chris Higgins (Washington, D.C.), Michael Chow (Orange County, CA), Johanna Jacob (San Francisco, CA), Don Daybell (Irvine, CA), all of Orrick, Herrington & Sutcliffe LLP Prepared and filed expert reports (June 2017, June 2018, and July 2018), direct and rebuttal witness statements (September 2018), testified at depositions (July 2017 and August 2018), and testified at trial (November 2018) in a patent infringement case at the ITC involving electrical connector patent 7004766

FCA US, LLC v. **Lear Corporation** v. Delphi Connection Systems US, Inc. (f/k/a FCI Automotive USA, Inc.) Case Number 2015-146773-CK (Oakland County Circuit Court, State of Michigan) John Trentacosta, Vanessa Miller, and Leah Imbrogno, Foley & Lardner LLP (Detroit, MI) Investigated cause of failure and filed an expert report (September 2016) and testified at deposition (October 2016) and testified at trial (April 2017) with respect to a breach of warranty / fitness for purpose suit involving wire crimp terminations in an electrical connector

Corning Optical Communications RF, LLC v. PPC Broadband, Inc. (d/b/a PPC) United States Patent and Trademark Office (Patent Trial and Appeal Board) Todd Walters and Roger Lee, Buchanan Ingersoll & Rooney PC (Alexandria, VA) Prepared and filed expert reports (August 2016) supporting Petitions for Inter-Partes Review of electrical connector patents 8366481 and 8075338

PPC Broadband, Inc. (d/b/a PPC) v. **Corning Gilbert Inc. (d/b/a Corning Optical Communications RF, LLC)** Civil Action Number 5:11-cv-0761 (United States District Court, Northern District of New York) Joseph Lavelle, DLA Piper LLP (Washington, D.C.) and Susan Acquista (San Diego, CA) Prepared and filed an expert report (October 2015) regarding Inequitable Conduct in an infringement case over electrical connector patents 6558194 and 6848940

PPC Broadband, Inc. (d/b/a PPC) v. **Corning Gilbert Inc. (d/b/a Corning Optical Communications RF, LLC)** United States Patent and Trademark Office (Patent Trial and Appeal Board) Todd Walters and Roger Lee, Buchanan Ingersoll & Rooney PC (Alexandria, VA) Prepared and filed expert reports (September 2015) supporting two Petitions for Inter-Partes Review of electrical connector patent 8647136 (re 5:14-cv-1170)

PPC Broadband, Inc. before the United States International Trade Commission (Washington, D.C.), re: **Corning Optical Communications RF, LLC**, Investigation No. 337-TA-938 Joseph Lavelle (Washington, D.C.) and Susan Acquista and Erin Gibson (both of San Diego, CA), and Aaron Fountain (Houston, TX), all of DLA Piper LLP Prepared and filed expert reports (June 2015, July 2015, and August 2015) and testified at deposition (July 2015) and addressed various interrogatories (May 2015) in an ITC investigation regarding electrical connector components and products on claims infringement and validity issues with respect to electrical connector patent 8801448

PPC Broadband, Inc. (d/b/a PPC) v. **Corning Gilbert Inc. (d/b/a Corning Optical Communications RF, LLC)** Civil Action Number 5:13-cv-0538 (United States District Court, Northern District of New York) Joseph Lavelle (Washington, D.C.) and Susan Acquista (San Diego, CA), DLA Piper LLP Prepared and filed expert reports (May 2015, June 2015, July 2015, and August 2015) in support of claims infringement and validity proceedings relating to electrical connector patent 6676446

PPC Broadband, Inc. (d/b/a PPC) v. **Corning Gilbert Inc. (d/b/a Corning Optical Communications RF, LLC)** United States Patent and Trademark Office (Patent Trial and Appeal Board) Todd Walters and Roger Lee, Buchanan Ingersoll & Rooney PC (Alexandria, VA) Prepared and filed expert reports (April 2015 and August 2015) in response to a Petition for Ex-Parte Reexamination (90/013,380) of electrical connector patent 7114990

PPC Broadband, Inc. (d/b/a PPC) v. **Corning Gilbert Inc. (d/b/a Corning Optical Communications RF, LLC)** Civil Action Number 5:12-cv-0911 (United States District Court, Northern District of New York) Joseph Lavelle, DLA Piper LLP (Washington, D.C.) Prepared and filed expert report (September 2014) in support of claims infringement and validity proceedings relating to electrical connector patent 8192237

PerfectVision Manufacturing vs. PPC Broadband, Inc. Civil Action Number 4:12-cv-00623 (United States District Court, Eastern Division of Arkansas, Western Division) Paul Chancellor, Ocean Law (Simi Valley, CA), Charles D. Davidson and David Gershner, Davidson Law Firm (Little Rock, AK), John Horvack, Jr., Carmody (New Haven, CT) Provided expert advice (August 2014) to counsel regarding a declaratory judgment claims infringement proceeding relating to electrical connector patents 8366481, 8485845, 8480431, 8475205, 8480430, and 8469740

Corning Gilbert Inc. (d/b/a Corning Optical Communications RF, LLC) v. PPC Broadband, Inc. (d/b/a PPC) United States Patent and Trademark Office (Patent Trial and Appeal Board) IPR2014-00736 Todd Walters and Roger Lee, Buchanan Ingersoll & Rooney PC (Alexandria, VA) Prepared and filed expert reports (May 2014 and January 2015) and testified at deposition (October 2014) supporting a Petition for Inter-Partes Review of electrical connector patent 6676446

Corning Gilbert Inc. (d/b/a Corning Optical Communications RF, LLC) v. PPC Broadband, Inc. (d/b/a PPC) Civil Action Number 2:12-cv-02208 (United States District Court, District of Arizona) Joseph Lavelle, DLA Piper LLP (Washington, D.C.) Prepared and filed expert reports (May, July, Aug, and Nov 2014) and testified at depositions (July and September 2014) and provided technical advice to counsel while conducting a deposition (August 2014) in support of claims infringement and validity proceedings relating to electrical connector patents 7114990 and 8172612

PPC Broadband, Inc. (d/b/a PPC) v. **Corning Gilbert Inc. (d/b/a Corning Optical Communications RF, LLC)** United States Patent and Trademark Office (Patent Trial and Appeal Board) Todd Walters and Roger Lee, Buchanan Ingersoll & Rooney PC (Alexandria, VA) Prepared and filed expert reports (May 2014) in response to a Petition for Ex-Parte Reexamination (90/012,835) of electrical connector patent 8172612

Corning Gilbert Inc. (d/b/a Corning Optical Communications RF, LLC) v. PPC Broadband, Inc. (d/b/a PPC) United States Patent and Trademark Office (Patent Trial and Appeal Board) Todd Walters and Roger Lee, Buchanan Ingersoll & Rooney PC (Alexandria, VA) Prepared and filed expert reports (March 2014, July 2014, and May 2015) supporting a Petition for Inter-Partes Reexamination (95/002,400) of electrical connector patent 8192237

PPC Broadband, Inc. (d/b/a PPC) v. **Corning Gilbert Inc. (d/b/a Corning Optical Communications RF, LLC)** Civil Action Number 5:13-cv-01310 (United States District Court, Northern District of New York) Joseph Lavelle, DLA Piper LLP (Washington, D.C.) Prepared and filed expert report (February 2014) supporting a preliminary injunction proceeding relating to electrical connector patents 8562366 and 8597041

Corning Gilbert Inc. (d/b/a Corning Optical Communications RF, LLC) v. PPC Broadband, Inc. (d/b/a PPC) United States Patent and Trademark Office (Patent Trial and Appeal Board) IPR2014-00441 Todd Walters and Roger Lee, Buchanan Ingersoll & Rooney PC (Alexandria, VA) Prepared and filed expert report (February 2014) and testified at deposition (October 2014) supporting a Petition for Inter-Partes Review of electrical connector patent 8562366

Corning Gilbert Inc. (d/b/a Corning Optical Communications RF, LLC) v. PPC Broadband, Inc. (d/b/a PPC) United States Patent and Trademark Office (Patent Trial and Appeal Board) IPR2014-00440 Todd Walters and Roger Lee, Buchanan Ingersoll & Rooney PC (Alexandria, VA) Prepared and filed expert reports (February 2014 and February 2015) and testified at deposition (October 2014) supporting a petition for Inter-Partes Review of electrical connector patent 8597041

John Mezzalingua Assoc., Inc. (d/b/a PPC) v. International Communications Mfg. Corp., Randall A. Holliday & **Belden, Inc.** Case No. 3:11-cv-00424 (Western District of WI) Robert Silverman, Foley & Lardner LLP (Boston, MA). Prepared expert report; case stayed to arbitration (March 09, 2012). With respect to patents 6558194 and 6848940 for electrical connectors

Murata Corporation v. **Insilco Corporation / Stewart Connector Systems, Inc.** Martin Raskin, Wolf, Block, Schorr, and Solis-Cohen, LLC (New York, NY). Testified at deposition (2007). Regarding litigation over certain patents involving modular jack connectors

Cardinal Health301, Inc. (formerly Pyxis Corporation) v. Tyco Electronics Corporation, Thomas & Betts Corporation, **REMEC, Inc.** Case No. GIN 040706 (California Superior Court, North San Diego County Division). Michael Tracy, DLA Piper Rudnick Gray Cary (San Diego, CA). Provided technical investigations, reports, and trial exhibits identifying cause of failure. Court cleared defendant of breach of contract allegations (July 2006), regarding spring pin interconnections in a medical dispensing device

Panduit v. **Insilco Corporation / Stewart Connector Systems, Inc.** Douglas Anderson, Porter Wright Morris & Arthur (Columbus, OH). Provided input and made recommendations to a settlement conference (1999-2000, District of IL) with respect to litigation over a breach of warranty / fitness for use case over a modular jack connector

Insilco Corporation / Stewart Connector Systems, Inc. v. Sentinel Connector Systems (York County Court, State of Pennsylvania) Reese Griffiths, Barley Snyder (York, PA) and Hewitt Pate, Hunton & Williams LLP (Washington, D.C.). Conducted a detailed investigation tracing the origin of certain design drawings, prepared data for trial exhibits, and provided testimony at trial (1998). Regarding litigation over theft of intellectual property / trade secrets case

Augat Corporation / LRC Electronics, Inc. v. John Mezzalingua Associates, Inc. Case No. 95-cv-1661 (Northern District of NY) Dean Bostock, Weingarten, Schurgin, Gagnebin, & Hayes (Boston, MA). Testified at deposition (1996). With respect to litigation over design aspects of certain coax connectors