

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MILWAUKEE ELECTRIC TOOL CORPORATION,
Petitioner,

v.

KLEIN TOOLS, INC.,
Patent Owner.

U.S. Patent No. 11,452,327
Case No. IPR2025-00724

Declaration of Per Reinhall, Ph.D.

U.S. Patent No. 11,452,327

Petitioner Ex. 1002

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EXHIBIT LIST

Exhibit	Description
Ex-1001	U.S. Patent No. 11,452,327 (“’327 Patent”)
Ex-1002	Declaration of Expert Dr. Per Reinhall
Ex-1003	<i>Curriculum Vitae</i> of Expert Dr. Per Reinhall
Ex-1004	Prosecution History of the application that led to the ‘327 Patent
Ex-1005	U.S. Provisional Application No. 62/622,472 (“’472 Provisional”)
Ex-1006	U.S. Provisional Application No. 62/645,491 (“’491 Provisional”)
Ex-1007	U.S. Patent Application No. 16/246,935 as filed January 14, 2019 (“’935 Application”)
Ex-1008	Comparison of the ’327 Patent and the ’935 Application
Ex-1009	Chinese Utility Model App. No. 201120014896.0 to Yan (“Yan-CN”)
Ex-1010	Klein Tools “Klein Tools’® New Hard Hats Designed for Pros—Safety, Comfort and Fit,” July 23, 2019 (“Klein News Release”)
Ex-1011	Certified Translation of Chinese Utility Model App. No. 201120014896.0 to Yan (“Yan”)
Ex-1012	U.S. Patent No. 9,993,043 to Daley (“Daley”)
Ex-1013	U.S. Patent No. 4,304,009 to Nesbitt et al. (“Nesbitt”)
Ex-1014	German Utility Model App. No. 2020-06007009 to Kiessler (“Kiessler-DE”)
Ex-1015	Certified Translation of German Utility Model App. No. 2020-06007009 to Kiessler (“Kiessler”)

Ex-1016	Complaint in International Trade Commission (ITC) investigation No. 337-TA-1442, titled <i>Certain Glow Fish Tape Systems, Safety Helmet Systems, and Components Thereof</i> (“ITC Complaint”)
Ex-1017	Webpage printout at https://www.osha.gov/Publications/osh3151.pdf (Personal Protective Equipment) OSHA 3151-12R 2004.

I, Per Reinhall, Ph.D., declare as follows:

I. ENGAGEMENT

1. I reside at 11318 Riviera PL NE, Seattle, Washington.
2. I have been retained by Milwaukee Electric Tool Corporation (“Petitioner”) in connection with the above-captioned petition for *Inter Partes* Review (“IPR”) of U.S. Patent No. 11,452,327 to Shantanu Deshpande and Kingston Wong (“’327 Patent,” Ex. 1001). I understand the ’327 Patent is currently assigned to Klein Tools, Inc. (“Patent Owner”).
3. I have been asked by Petitioner to offer opinions regarding the ’327 Patent, including the unpatentability of claims 1-17, which I refer to using the term “Challenged Claims,” in view of certain prior art. This declaration sets forth the opinions I have reached to date regarding these matters.
4. I am being compensated by Petitioner at my standard hourly consulting rate for my time spent on this matter. My compensation is not contingent on the outcome of the IPR or on the substance of my opinions.
5. I have no financial interest in Petitioner or Patent Owner.

II. PROFESSIONAL BACKGROUND

6. My qualifications are set forth in my curriculum vitae, a copy of which is attached as Exhibit 1003. As set forth in my curriculum vitae:

7. I received a Bachelor of Science in Mechanical Engineering from the University of Washington, a Master of Science in Applied Mechanics from Caltech, and a Doctor of Philosophy in Applied Mechanics from Caltech.

8. I am currently a professor of Mechanical Engineering and an adjunct professor of Industrial and Systems Engineering at the University of Washington. My research includes topics such as design and manufacturing, materials, dynamics and vibrations, structural mechanics and design, biomedical devices, computation, impact dynamics, acoustics & noise control controls & robotics, and biomechanics. I have various awards in recognition of my research, including UW Presidential Entrepreneurial Faculty Fellow, member of the Washington State Academy of Science, University of Washington School of Medicine Inventor of the Year Award (for inventing a safer football helmet), and ASME Best Journal Paper of the Year Award in 2004 and 2017.

9. In addition, I am the cofounder of VICIS, a company where I lead the development and production of the safest commercially available football helmets (as tested conducted by NFL). I am also currently the chief technology officer at Marine Construction Company, PBC and a member of the board at RoseBiopsy Inc. I co-founded these companies in 2011 and 2020, respectively.

10. As part of my various roles at University of Washington, I am actively involved in industry. For example, I founded the Boeing Advanced Research

Center (BARC) at UW and the PACCAR Advanced Research Center. Both centers are directly supported by industry and address the need of industry.

11. In addition, I founded and directed the Engineering Innovation in Health Program at the University of Washington. More details can be found at the program's website (<https://eih.uw.edu/about>).

12. My work has been published numerous times in scientific journals, including ASME Journal of Applied Mechanics, Journal of Neurosurgery, Journal of Applied Composite Materials, Journal of Dynamic Systems, Measurement, and Controls, and Journal of Cellular Polymers.

13. I am an inventor, and I have been awarded more than 28 patents in various fields including seven on helmet design.

14. Additional information regarding my background, qualifications, publications, and presentations is provided in my CV, which I understand has been submitted as Exhibit 1003.

III. MATERIALS REVIEWED

15. In forming my opinions, I have reviewed the '327 Patent and considered each of the documents listed in the Exhibit List above and all other materials discussed herein. In reaching my opinions, I have relied upon my experience in the field and also considered the viewpoint of a person of ordinary skill in the art as of the time of the relevant priority date of the '327 Patent, *i.e.*,

January 26, 2018 or October 21, 2021. As explained below, I am familiar with the level of a person of ordinary skill in the art regarding the technology at issue as of that time and all of the opinions I have formed have been assessed from the perspective of the person of ordinary skill in the art.

IV. DESCRIPTION OF THE RELEVANT TIMEFRAME, THE RELEVANT FIELD, AND A PERSON OF ORDINARY SKILL IN THE ART

16. I understand that the '327 Patent was filed on January 14, 2019, and claims priority to Provisional Application No. 62/622,472 (Ex-1005), filed on January 26, 2018, and Provisional Application No. 62/645,941 (Ex-1006), filed on March 20, 2018.

17. For purposes of my analysis, I have treated the effective filing date for the Challenged Claims as January 26, 2018 for my opinions concerning combinations including Yan and as October 21, 2021 my opinion concerning the Klein News Release. I reserve the right to update my analysis should Patent Owner assert a different priority date.

18. I have received and understand the specification, claims, and file history of the '327 Patent.

19. I considered several factors to determine the skill level of a person of ordinary skill in the art, including the types of problems encountered in the art, the

solutions to those problems, the pace of innovation in the field, the sophistication of the technology, and the education level of active workers in the field.

20. In my opinion, a person having ordinary skill in the art (“POSA”) would have had a bachelor’s degree in mechanical engineering, civil engineering, industrial engineering, industrial design, or plastics engineering, with at least 2 years of industry experience and/or research, concerning protective gear, such as safety helmets. A POSA would also have known those aspects that the patent admits as part of the prior art, including at least: forward-facing headlamps on safety helmets; and safety helmets often being worn in a reverse orientation. Ex-1005, ¶¶10, 11.

21. The opinions I present here are as viewed through the eyes of a POSA prior to January 26, 2018, except for with respect to Ground 4, which are as viewed through the eyes of a POSA prior to October 21, 2021.

V. TECHNOLOGY BACKGROUND

22. Commonly known as “hard hats,” safety helmets are a type of personal protective equipment designed to safeguard the wearer’s head. Ex-1017, 16. These helmets are widely used in many industries. Ex-1017, 17.

23. Safety helmets can protect wearers from impact and penetration hazards, as well as electrical shock and burn hazards. Ex-1017, 16. Additionally, safety helmets often feature brims for further protection from sunlight and debris,

enhancing the wearer's overall safety and comfort. Ex-1017, 18. For further utility, some safety helmets are designed to work with accessories, such as face shields, earmuffs, and mounted lights. Ex-1017, 18.

24. These helmets are typically constructed from high-density plastic materials (and have been constructed from plastic for decades), which provide the helmets with a robust and lightweight structure. Integral molding is a common method used in safety helmet production, with the process involving molding plastic into a single, cohesive unit—thereby enhancing the helmet's structural integrity and impact resistance.

VI. THE '327 PATENT

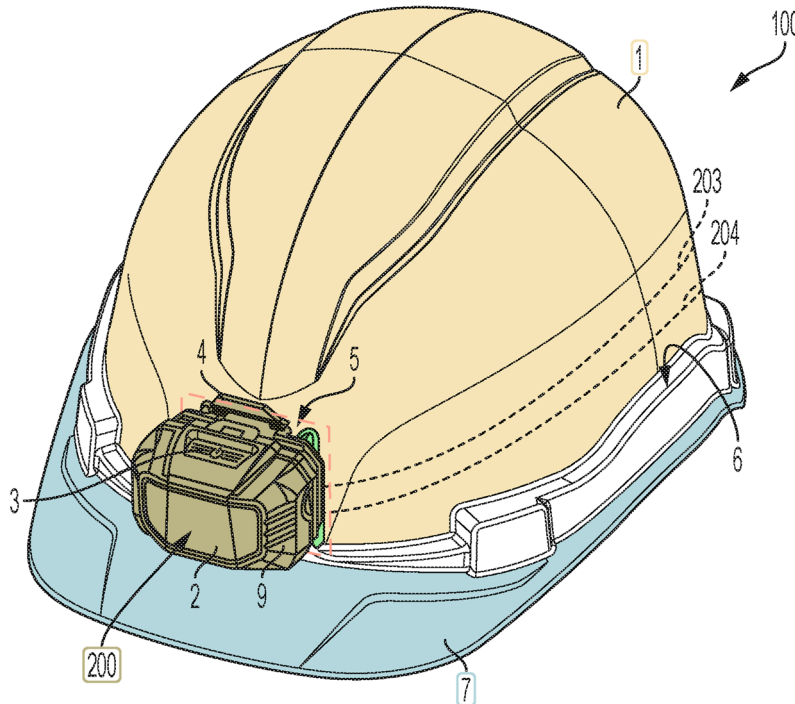
25. I have reviewed the '327 Patent and understand that Shantanu Deshpande and Kingston Wong are named as the inventors on this patent. The '327 Patent relates to personal protection devices such as safety helmets. Ex-1001, 1:14-15.

26. The '327 Patent issued from the '935 Application, which was filed on January 14, 2019. The '935 Application claims priority to the '472 Provisional, filed on January 26, 2018, and to the '491 Provisional, filed on March 20, 2018. I refer to the '935 Application, '472 Provisional, and '491 Provisional collectively as "Priority Applications."

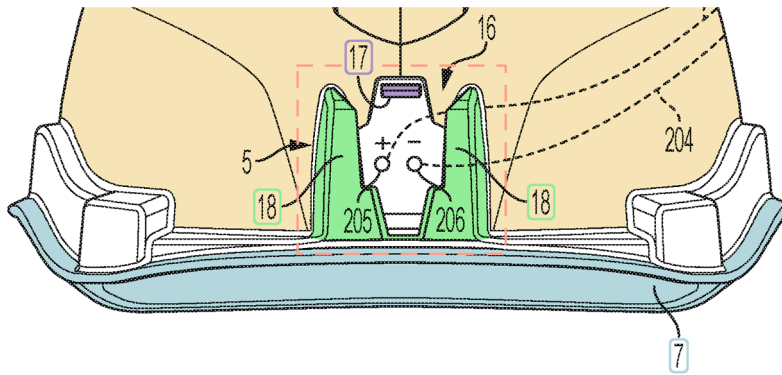
A. Overview

27. The '327 Patent is concerned with mounting accessory devices (*e.g.*, headlamps) to safety helmets in a manner that prevents slipping and constant readjustment from the user. Ex-1001, 1:59-2:3. To achieve this, the '327 Patent describes safety helmets having front and rear receptacles for detachably mounting accessory devices. Ex-1001, 1:27-38.

28. The '327 Patent describes safety helmets having an **outer shell**, a **brim**, an **accessory device**, and a **receptacle** for mounting the accessory device. The receptacle has not been labeled in the drawings of the '327 Patent but is described as including an external slot (*e.g.*, flanked by raised **sidewalls**) and a **protruding nub**. Ex-1001, Fig. 3.



Ex-1001, Fig. 1



Ex-1001, Fig. 3 (Excerpt)

29. I note that except where I state otherwise, the coloring has been added to the figures in this declaration. Bolded text has also been added throughout my declaration for emphasis unless otherwise indicated.

B. Prosecution History

30. As filed, Priority Applications did not include any mention of the receptacles or protruding nubs being “unitary” or “integrally molded.” Ex-1005, Ex-1006, Ex-1007.

31. During prosecution Patent Owner repeatedly attempted to add new matter. First, on April 7, 2021, Patent Owner introduced language that “the front receptacle and the rear receptacle are of a unitary part of the outer shell.” Ex-1004, 309.

32. This addition of new matter was rejected by the Examiner with a written description rejection. Ex-1004, 287-288, which I have been instructed about, as I describe in Section XIII below.

33. On July 16, 2021, Patent Owner added language that a slot, which is part of the front/rear receptacle, “is a unitary part of the outer shell.” Ex-1004, 260-263. This was also rejected by the Examiner. Ex-1004, 216-217.

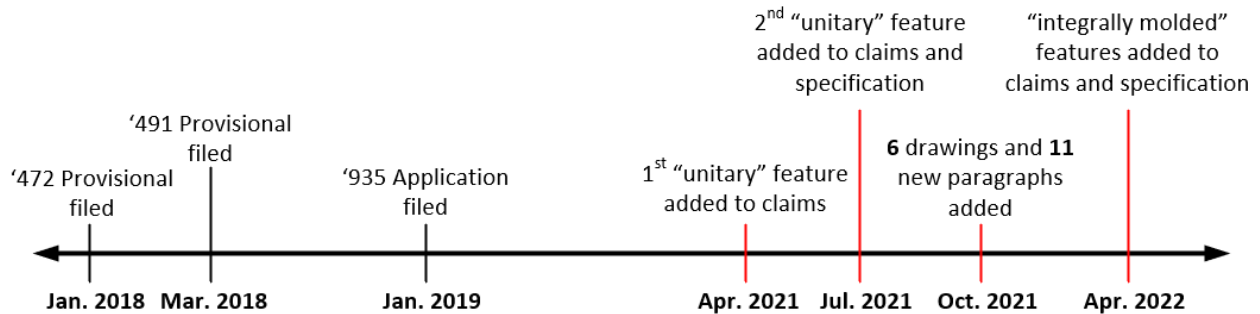
34. In the following response on September 27, 2021, Patent Owner appears to have relented and removed the “unitary” language from the claims. Ex-1004, 204.

35. However, on October 6, 2021, Patent Owner added 6 new drawings and amendments to existing paragraphs as well as 11 new paragraphs. Ex-1004, 149-152, 159-163. At this time, Patent Owner reintroduced the “unitary” language, such as reciting that the “protruding nub is a unitary feature of the outer shell,” “the outer shell forms the protruding nub,” “the outer shell forms the protruding nub,” and “the brim, the front receptacle, and the rear receptacle are a unitary feature of the outer shell.” Ex-1004, 153-156. The Examiner again rejected the additions. Ex-1004, 121-126.

36. On April 25, 2022, Patent Owner added new language about features being “integrally molded” from a common/same material. Ex-1004, 58, 62-65, 72-78.

37. In summary, an extensive amount of new matter was added after the Priority Documents were filed. This is illustrated in the Timeline below as well as

Ex-1008, which is a redline showing differences between the '935 Application as-filed and the '327 Patent.



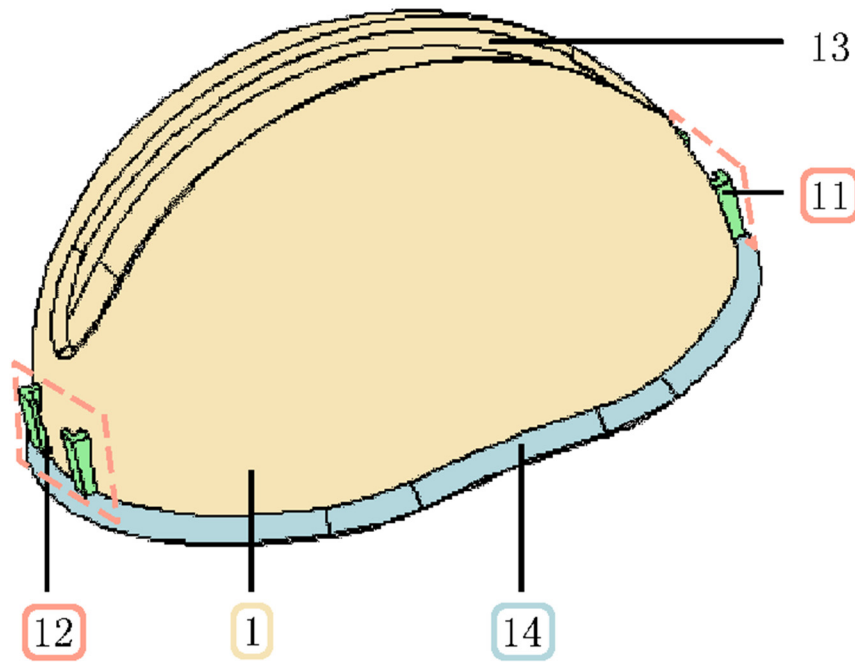
Timeline of Added Subject Matter

VII. OVERVIEW OF THE PRIOR ART

A. Yan (Ex-1009 and Ex-1011)

38. The Yan reference published on November 9, 2011. I understand Yan as being as prior art with respect to the '327 Patent. Also, I understand Ex-1009 as being an authentic copy of Yan, and I understand Ex-1011 as being an accurate translation of the reference.

39. Yan discloses a safety helmet with a **helmet body 1**, a **brim 14**, and **snap-fit slots 11 and 12**, each of which includes a respective pair of symmetrically arranged **L-shaped slots**. Ex-1011, ¶¶5, 9.

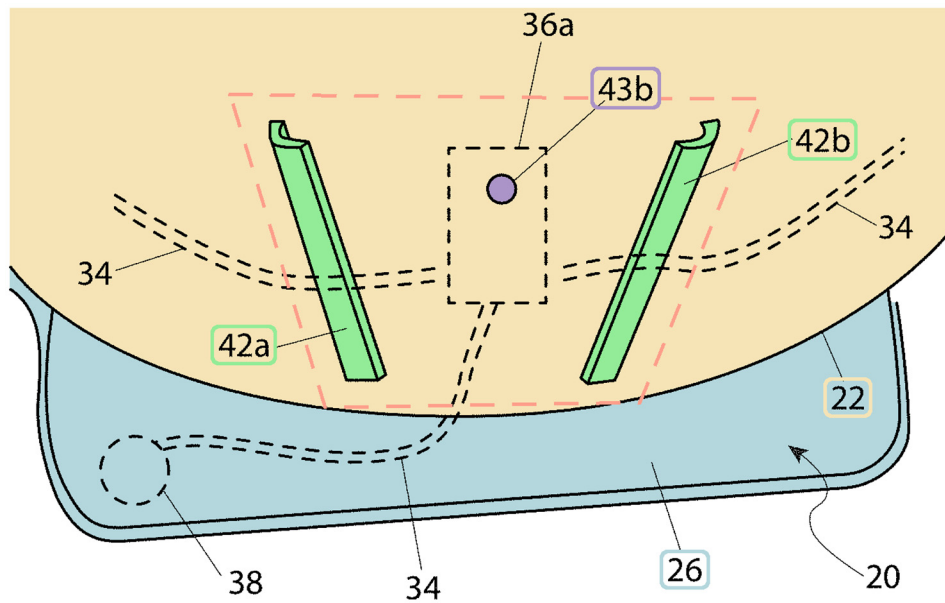


Ex-1011, Fig. 2

B. Daley (Ex-1012)

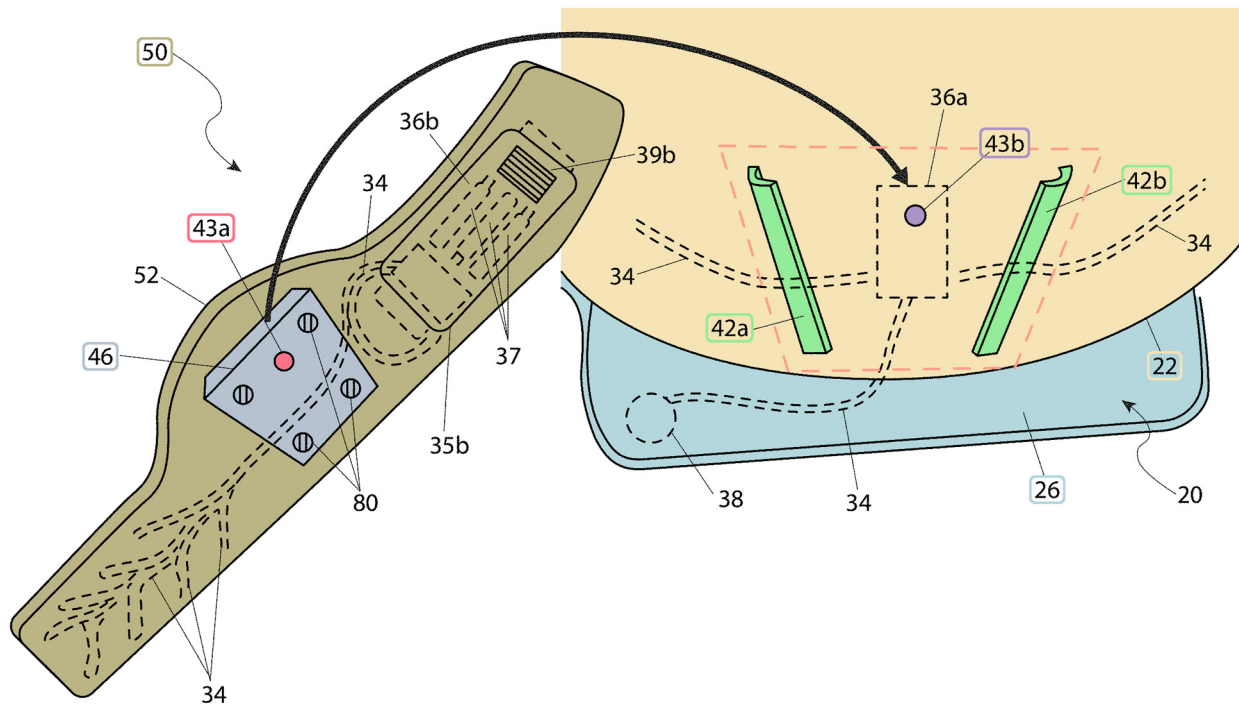
40. The Daley reference was filed on March 25, 2015 and issued on June 12, 2018. I understand Daley as being as prior art with respect to the '327 Patent. Also, I understand Ex-1012 as being an authentic copy of Daley.

41. Daley discloses a safety helmet with a **shell 22**, a **brim 26**, and a **receptacle** that includes a pair of **locking ears 42a and 42b** with a **protrusion 43b** positioned between the **locking ears**. Ex-1012, 1:57-66.



Ex-1012, Fig. 3 (Excerpt)

42. Additionally, Daley teaches a **headlight assembly 50** that includes “an interlocking trapezoidal-shaped male **bracket 46**.” Ex-1012, 5:27-31. Daley’s male **bracket 46** includes a recessed **detent 43a**, and “[u]pon complete insertion of male **bracket 46** into the **locking ears**, the **protrusion 43b** ‘snaps’ into the **detent 43a**, thereby temporarily securing the **headlight assembly 50** to the **shell 22**.” Ex-1012, 5:39-43.



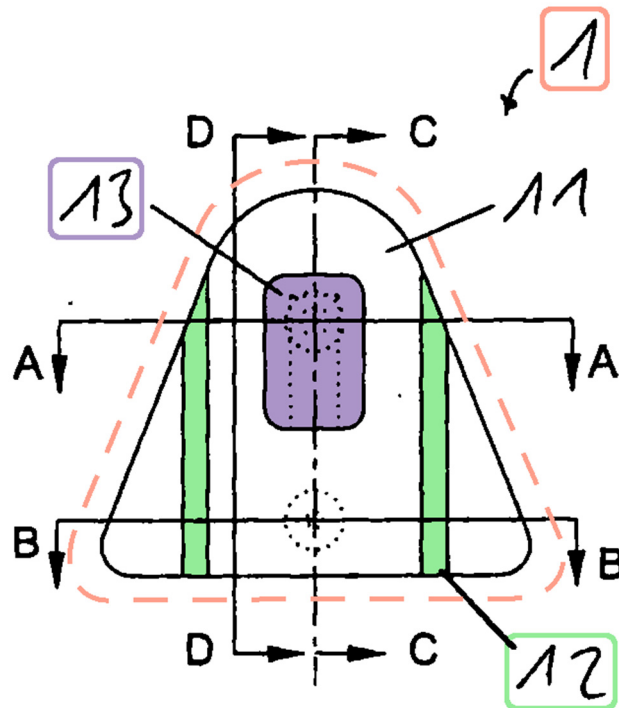
Ex-1012, Fig. 3

C. Kiessler (Ex-1014 and Ex-1015)

43. The Kiessler reference was published on August 31, 2006. I understand Kiessler as being as prior art with respect to the '327 Patent. Also, I understand Ex-1014 as being an authentic copy of Kiessler, and I understand Ex-1015 as being an authentic copy of Kiessler.

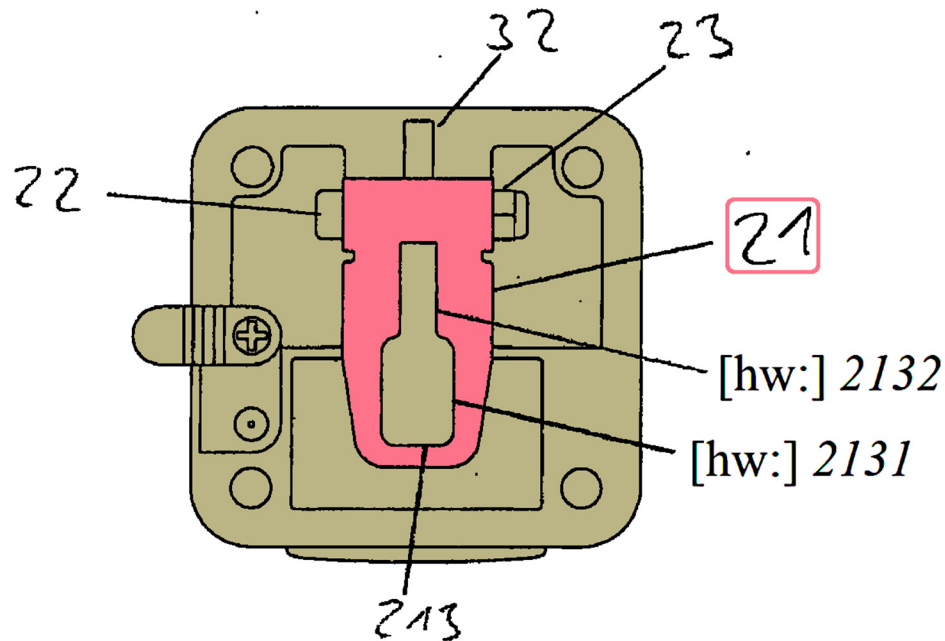
44. Kiessler describes a plastic, injection-molded receiver for mounting a lamp accessory, such as a miner's lamp, to a helmet. Ex-1015, ¶¶40, 46.

45. Kiessler teaches a “**receiver 1** ... in the form of a receiving shoe 10 with molded-on lateral wings 101.” Ex-1015, ¶46. Kiessler further teaches that “**groove head 13** is arranged centrally between the **stop edges 12** on the base plate 11.” Ex-1015, ¶36.



Ex-1015, Fig. 1

46. Additionally, Kiessler teaches a lamp accessory (**lamp 3**), such as an LED miner's lamp, and "a fixture 2 that corresponds to [the receiver 1] and can be attached to a lamp 3." Ex-1015, ¶34. Kiessler further teaches that the "fixture 2 comprises a **clamping lever 21**" (Ex-1015, ¶38) and a "recess 213 is provided in the clamping lever 21. The recess 213 is formed by a cutout 2131 whose inner contour essentially corresponds to the outer contour of the groove head 13 of the receiver 1" (Ex-1015, ¶39).

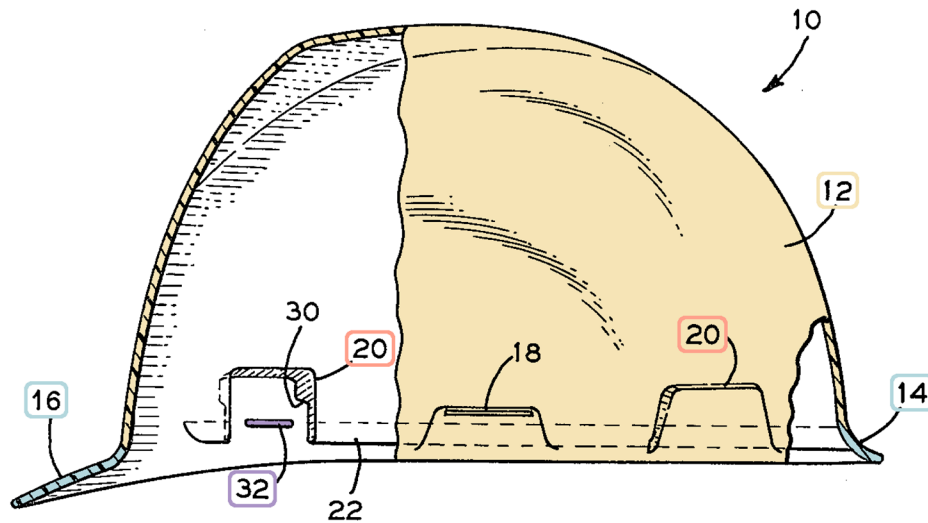


Ex-1015, Fig. 7

D. Nesbitt (Ex-1013)

47. The Nesbitt reference was published on December 8, 1981. I understand Nesbitt as being as prior art with respect to the '327 Patent. Also, I understand Ex-1013 as being an authentic copy of Nesbitt.

48. Nesbitt teaches a safety helmet having a polyethylene **shell 12** and a **brim 14**. Ex-1013, 2:56-64. Nesbitt further teaches that the safety helmet includes a plurality of **sockets 20** that are integrally molded into the shell (Ex-1013, 2:65-67), each socket including a **nub 32** (Ex-1013, 3:1-6).



Ex-1013, Fig. 8

E. Klein News Release (Ex-1016)

49. The Klein News Release was published on July 23, 2019. I understand the Klein News Release as being as prior art with respect to the '327 Patent. Also, I understand Ex-1016 as being an authentic copy of the Klein News Release.

50. The Klein News Release describes Klein Tools' "Safety Helmet System," which Patent Owner has asserted practices the '327 Patent. Ex-1016, ¶113, 114; Ex-1016 ¶27 ("On July 23, 2019, Klein Tools published a press release about its new generation of hard hat systems, designed, engineered, and built with safety, comfort, and fit for the tradespeople who wear them every day. These new hard hat systems incorporated the receptacle features discussed above and other innovative features such as reversible donning, a flexible open-frame suspension,

one-handed adjustment with a large knob ratchet, and more. Klein Tools' press release identified the product as then 'patent-pending.'"). Ex-1010, 1.



Ex-1010, Image 1

VIII. CLAIM CONSTRUCTION

51. I understand that claim construction is the process of determining the meaning of a term or phrase in a patent claim. I understand that the proper construction of a term is how a POSA would have understood the term based on its use in the claims, specification, and file history of the patent. I further understand that the claims are construed before the Board according to the same claim construction standard that applies in district courts. I have followed these principles in my analysis throughout this declaration. For the purpose of this

declaration, I do not believe that any express constructions are needed and have applied the plain and ordinary meaning of all terms.

IX. ANTICIPATION

52. I have been instructed as to the definition of “anticipation” in the context of the patent laws.

53. I understand that anticipation of a claim requires that every element of a claim be disclosed expressly or inherently in a single prior art reference, in combination, as claimed. I understand that a single prior art reference may anticipate claims without expressly disclosing a feature of the claimed invention if that feature is necessarily present, or inherent, in that reference. I understand that a reference is read from the perspective of one of ordinary skill in the art at the time of the invention.

X. OBVIOUSNESS

54. I have been instructed as to the definition of “obviousness” in the context of the patent laws.

55. It is my understanding that obviousness is a question of law based on underlying factual issues including the content of the prior art and the level of skill in the art. I understand that for a single reference or a combination of references to render the claimed invention obvious, a person of ordinary skill in the art must

have been able to arrive at the claims by altering or combining the applied references.

56. I also understand that when considering the obviousness of a patent claim, one should consider whether a teaching, suggestion, or motivation to combine the references exists to avoid impermissibly applying hindsight when considering the prior art. I understand this test should not be applied rigidly, but that the test can be important to avoid such hindsight.

XI. DUPLICATION OF PARTS

57. I have been instructed as to the definition of “duplication of parts” in the context of the patent laws.

58. It is my understanding that mere duplication of parts is a question of law based on underlying factual issues. From what I understand, the duplication is not patentably significant unless it produces a new and unexpected result.

XII. SELECTION OF KNOWN MATERIAL BASED ON ITS SUITABILITY FOR ITS INTENDED USE

59. I have been instructed as to the definition of “selection of a known material based on its suitability for its intended use” in the context of the patent laws.

60. It is my understanding that “selection of a known material based on its suitability for its intended use” is a question of law based on underlying factual

issues. From what I understand, the selection of a known material based on its suitability for its intended use is assumed to be obvious (and does not impart any patentable significance).

XIII. WRITTEN DESCRIPTION

61. I have been instructed as to the definition of “written description support” in the context of the patent laws.

62. I have been informed that a priority document (*e.g.*, a provisional application to which priority is claimed by a later utility application) provides written description support for a claim in the later utility application only if the priority document includes sufficient description in its text or figures such that a POSA would have understood that the inventors were in possession of the subject matter in the claim as of the date that the priority document was filed.

63. I have also been informed that literal, word-for-word textual support is not required to meet this standard.

XIV. OPINIONS REGARDING PATENTABILITY

64. In my opinion, claims 1 to 17 are obvious in view of a combination of Yan and Daley.

65. Additionally, in my opinion, claims 2, 4, 9, and 12 are obvious in view of a combination of Yan, Daley, and Kiessler.

66. Moreover, in my opinion, claims 1 to 17 are obvious in view of a combination of Yan and Nesbitt.

67. In my opinion, claims 1 to 17 are anticipated by Klein News Release.

XV. MY OPINIONS ON THE CHALLENGED CLAIMS IN VIEW OF THE PRIOR ART

A. Claims 1 to 17 in View of Yan and Daley

1. Combining Yan and Daley

68. As a threshold matter, in my opinion, Yan and Daley qualify as analogous art at least because they are in the same field of endeavor as the '327 Patent, *i.e.*, safety helmets. Ex-1001, 3:26-27; Ex-1011, ¶1; Ex-1012, 1:10-14. At minimum, both references are at least reasonably pertinent to at least one problem allegedly solved by the claimed invention—mounted accessories slipping off from safety helmets. Ex-1001, 1:27-38. In my opinion, ample motivation-to-combine also existed.

69. First, in my opinion, Yan invites a POSA to seek out “equivalent structural modifications.” Ex-1011, ¶29. Based on this, a POSA would have been expressly motivated to look to analogous references (including Daley), *e.g.*, to help understand certain aspects related to structural modifications of the snap-fit slot structures (particularly when seeking to construct Yan’s safety helmet). In my opinion, upon reviewing the analogous Daley reference, a POSA would have seen its teachings related to using a bracket with L-shaped appendages and a protrusion

to snap into a detent (Ex-1012, 5:35-40) and would have been motivated to modify each of Yan's snap-fit slot structures to be molded to the helmet body and include such a protrusion. Modifying each of the snap-fit slots in this manner would keep the snap-fit slots identical and allow for accessories to be detachably mounted to either slot in an identical manner as taught by Yan. Ex-1011, ¶25.

70. In my opinion, when modifying Yan's snap-fit slot structures to include Daley's protrusion, a POSA could adopt the teachings of Daley to integrally mold the receptacle (*e.g.*, Yan's L-shaped slots) with a protrusion to the safety helmet shell for each snap-fit slot using at least one same (*i.e.*, common) material. Ex-1012, 5:24-40. The POSA could also adopt Daley's positional teaching for the protrusion to centrally position the protrusion between the L-shaped slots in Yan. Ex-1012, 1:60-66. In my opinion, forming such features from a common material would have been cheaper, easier, and allowed for a reduced sales price for the Yan-Daley helmet, which would have further motivated the Yan-Daley combination.

71. In my opinion, when modifying Yan's snap-fit slot structures to include Daley's protrusion, a POSA could adopt the teaching of Daley to form Daley's bracket 46 with detent 43a on the lamp body of Yan's LED lamp 2 and mining lamp 3 by following Daley's teaching of having a bracket with a detent to engage with the protrusion. Ex-1012, 5:33-37. As taught by Daley, "the headlight

assembly 50 may be easily removed from the helmet assembly 20 using the male bracket 46.” Ex-1012, 6:55-57.

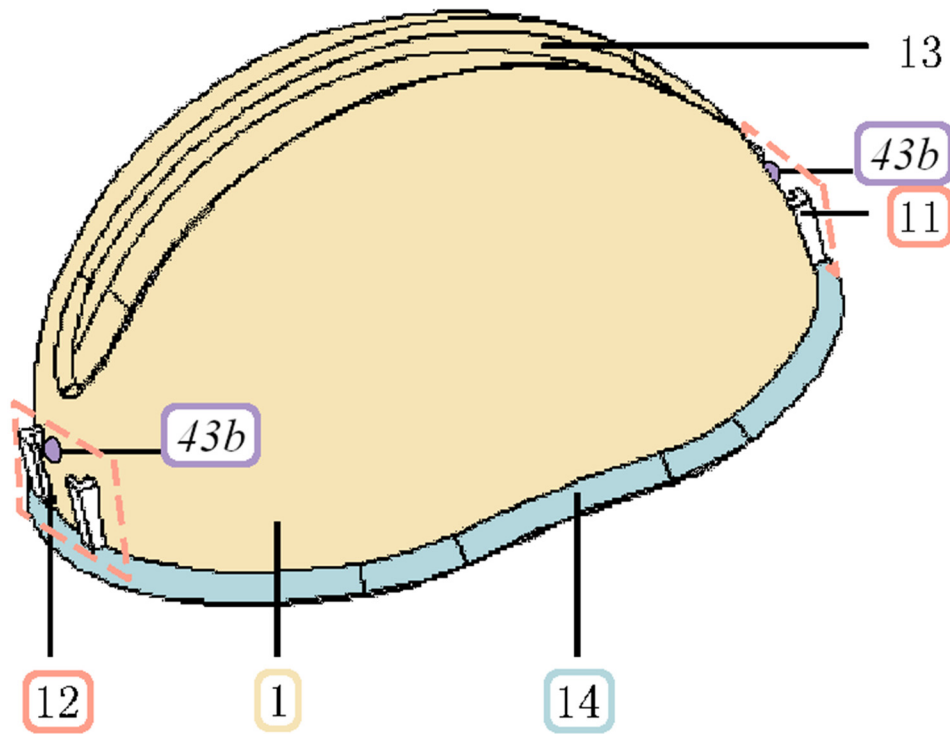
72. In my opinion, including the protrusion feature with the snap-fit slot structures and the bracket with detent in the accessories would create a more robust securing of the accessories in the snap-fit slot structures and thus would have been a desirable structural modification. Ex-1012, 5:40-43. In my opinion, having a more robust securing would have made the Yan-Daley helmet more attractive to potential purchasers, thereby further motivating the combination as a matter of commercial desirability.

73. In my opinion, a POSA would have been motivated to incorporate Daley’s centrally located and integrally molded protrusion into each of Yan’s snap-fit slot structures and the bracket with detent in the accessories to securely mount detachable accessory devices while keeping the snap-fit slots identical. In my opinion, adding Daley’s protrusion feature to Yan’s snap-fit slot structures and the bracket with detent in the accessories would have been routine for a POSA exercising only ordinary skill, so the modification would have been achieved with a reasonable expectation of success.

74. Additionally, or alternatively, in my opinion, modifying Yan’s safety helmet to include Daley’s integrally molded mounting features would have been obvious to try. There are only a finite number of predictable solutions for

improving the temporary security of the snap-fit slots. In my opinion, modifying Yan's safety helmet to include Daley's integrally molded mounting features would also have been simple substitution of one element (a receptacle having L-shaped slots and protrusion 43b) for another (a snap-fit slot receptacle having only L-shaped slots) to obtain predictable results (an integrally molded receptacle having an external slot and protruding nub to more securely fasten Yan's lamp accessories). In my opinion, a POSA seeking to improve Yan's **snap-fit slot** structure for temporarily securing accessory devices, would have recognized that incorporating Daley's integrally molded receptacle and corresponding bracket involved a known method of molding and had a predictable result. The result in this case is a molded receptacle having a **protruding nub** and a corresponding accessory having a bracket for more securely snapping in detachable accessory devices.

75. An example depiction of the Yan-Daley helmet is shown below. The modified figure represents Yan's helmet depicted in Yan's Figure 2 modified to include Daley's protrusion 43b for each snap-fit slot.



Combined Yan-Daley Helmet

2. Claim 1

76. In my opinion, the Yan-Daley helmet teaches all elements of claim 1.

a. Element 1[pre]

77. Element 1[pre] recites “a safety helmet.” In my opinion, the Yan-Daley helmet teaches this element.

78. The '327 Patent identifies safety helmets as “commonly also being referred to as ‘hard hats’” and being “for use to protect the wearer from falling objects.” Ex-1001, 1:15-17. The '327 Patent acknowledges that such helmets are

commonly used in several industries such as underground mines. Ex-1001, 1:15-17 and 1:50-52.

79. Yan teaches “a safety helmet, and more specifically, ... a mining safety helmet with an emergency lighting function.” Ex-1011, ¶1. Yan’s safety helmet is modified to include Daley’s protrusion 43b and, thus, in my opinion, the Yan-Daley helmet teaches a safety helmet.

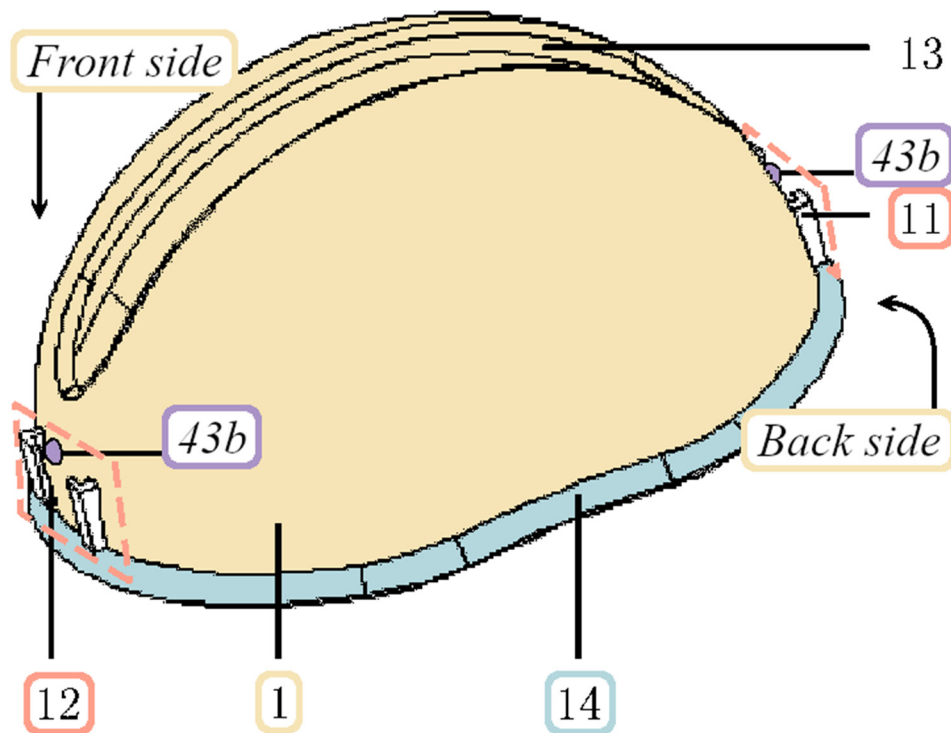
b. Element 1[a][i]

80. Element 1[a][i] recites “an outer shell adapted to be worn by a user, the outer shell being molded from a common material and having an exterior surface defining a front side, a rear side, and a brim extending forward from the front side and configured to shield the user's eyes from sunlight or falling debris.”

81. In my opinion, the Yan-Daley helmet teaches this element.

82. First, the Yan-Daley helmet teaches an outer shell adapted to be worn by a user. Yan teaches that “[t]he mining safety helmet is an essential tool for miners working underground” and that “[i]t not only provides lighting but also effectively protects the miner’s head from falling objects.” Ex-1011, ¶2. Yan also teaches that the safety helmet includes a “helmet body 1.” Ex-1011, ¶16. Yan’s helmet body is an outer shell adapted to be worn by a user. Therefore, in my opinion, the Yan-Daley helmet teaches such an outer shell adapted to be worn by a user.

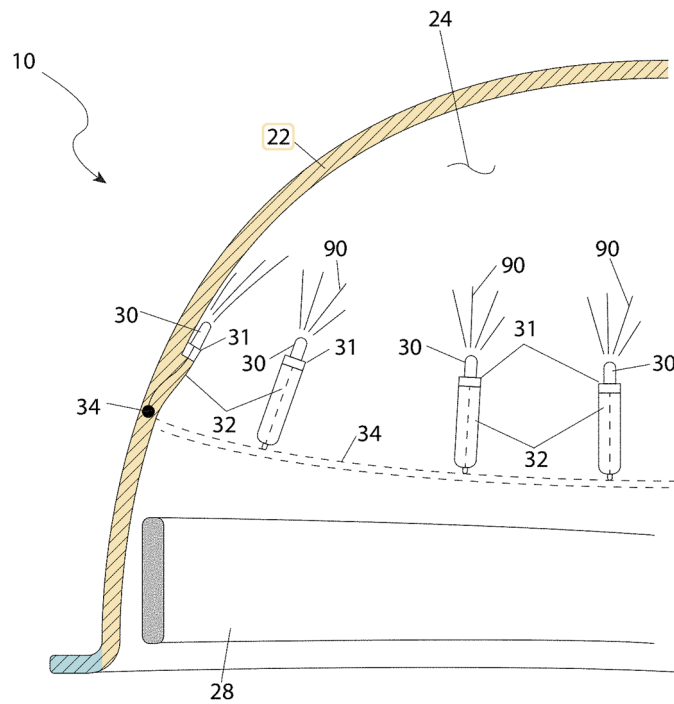
83. Second, the Yan-Daley helmet teaches the outer shell having an exterior surface defining a front side, a rear side, and a brim extending forward from the front side and configured to shield the user's eyes from sunlight or falling debris, as illustrated in modified Figure 2 below. Yan teaches that "**brim 14** is located at the bottom of the **helmet body 1** and encircles the bottom edge of the **helmet body 1**." Ex-1011, ¶19. A **brim** encircling the bottom edge of the **helmet body** extends forward from the front side, as illustrated in modified Figure 2 below. Yan further teaches that the "function of the **brim 14** is to enhance protective coverage, effectively preventing small falling debris from entering the miner's eyes, ears, mouth, or nose." Ex-1011, ¶19. In my opinion, Yan's Figure 2 illustrates a **helmet body 1** with a **brim 14** that extends forward from the front side. Therefore, in my opinion, the Yan-Daley helmet teaches such an outer shell having an exterior surface defining a front side, a rear side, and a brim.



Combined Yan-Daley Helmet

84. Third, the Yan-Daley helmet teaches or suggests being molded from a common material. Daley includes a line drawing, Figure 4, which I’ve reproduced below. Daley’s Figure 4 illustrates a cross-sectional view of the shell 22 showing consistent unbroken lines and the same cross-hatching pattern throughout the shell and brim of the safety helmet. Therefore, in my opinion, Daley teaches that the brim is integrally molded with the shell of the safety helmet.

85. Daley further teaches that a safety helmet includes a shell body of one material. Ex-1012, 1:58-61. The safety helmet shell includes “integrally-molded portions” such as “protrusion 43b” and “a first locking ear 42a and a second locking ear 42b.” Ex-1012, 5:25-27, 5:37-40.



Ex-1012, Fig. 4

86. In my opinion, a POSA would have found it obvious to mold Yan's shell using a common material throughout (as Daley teaches). Yan describes a helmet body 1, which teaches the '327 Patent's outer shell, and a brim 14, which teaches the '327 Patent's brim. The Yan-Daley helmet incorporates these features. Therefore, the Yan-Daley helmet teaches an outer shell (helmet body 1) adapted to be worn by a user, the outer shell being molded from a common material and having an exterior surface defining a front side, a rear side, and a brim (brim 14) extending forward from the front side and configured to shield the user's eyes from sunlight or falling debris.

c. Element 1[a][ii]

87. Element 1[a][ii] recites “wherein the outer shell is reversible such that one of the front side or the rear side is oriented above a face of the user when the outer shell is worn by the user.”

88. In my opinion, the Yan-Daley helmet is capable of being worn in reverse on a user’s head as desired. In my opinion, the claim does not include any structure that differentiates a “reversible” helmet from any other safety helmets, such as those taught by Yan and Daley. Moreover, workers have often worn their safety helmets backwards, as acknowledged by the inventors. The ’472 Provisional (Ex-1005, ¶11) acknowledges that “For a variety of reasons, **it is common for typical users of safety helmets often choose to wear their safety helmets in a reverse orientation**, with the brim facing rearward. The reverse orientation is often advantageous in situations requiring the user of the safety helmet to look upward unobstructed by the brim of the helmet or simply to increase the user's field of vision. **This reverse orientation of a safety helmet is so commonly employed** that several standard-promulgating organizations, including ANSI and CSA, require that helmets be safety tested in both standard and reverse orientation.”

89. If the reversibility feature is not inherent, in my opinion, it would have been an obvious modification to make the Yan-Daley helmet reversible to capture more sales from users wanting reversible helmets.

d. Element 1[a][iii]

90. Element 1[a][iii] recites “wherein the brim is configured to be disposed above the face of the user when the outer shell is worn by the user with the front side being oriented above the face of the user.”

91. In my opinion, the Yan-Daley helmet teaches this element. As I discuss above in Section XV(A)(2)(b), Yan teaches a “brim 14” that “encircles the bottom edge of the helmet body 1.” Ex-1011, ¶19. Such a brim would be disposed above the face of the user when the outer shell is worn by the user with the front side being oriented above the face of the user. Therefore, in my opinion, the Yan-Daley helmet teaches this aspect.

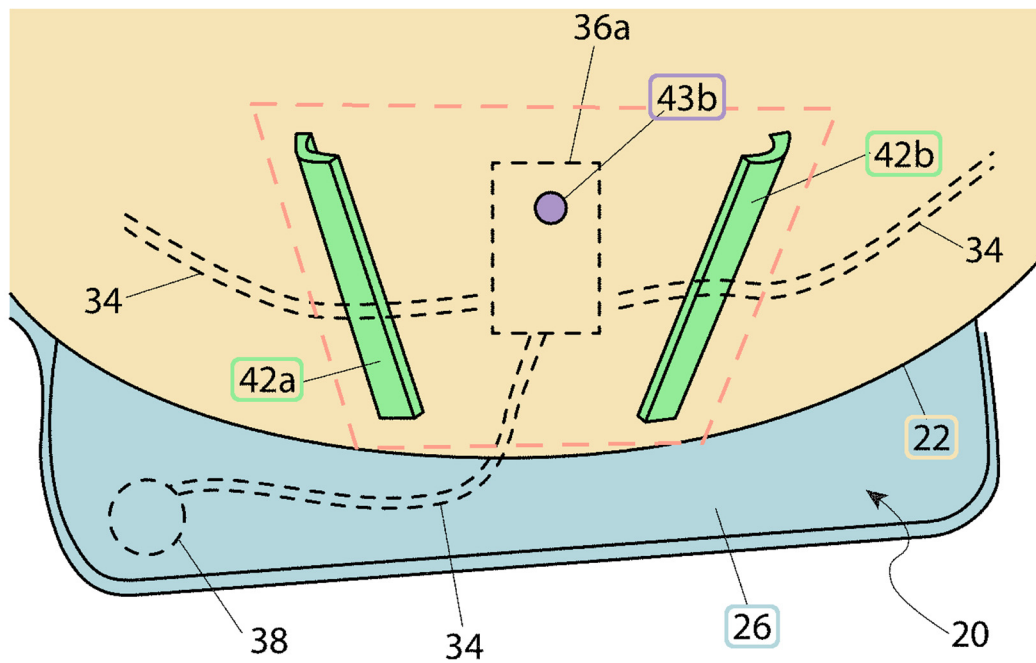
e. Element 1[b]

92. Element 1[b] recites “a front receptacle having an external slot extending upwardly along the front side on the exterior surface of the outer shell above the brim and a protruding nub, wherein the protruding nub is integrally molded with the outer shell from the common material and is disposed centrally relative to the external slot and directly onto the exterior surface of the outer shell

at an upward location away from the brim.” In my opinion, the Yan-Daley helmet teaches this element.

93. First, Yan teaches a snap-fit slot 11, which teaches the ’327 Patent’s front receptacle. Yan’s snap-fit slot 11 is located on an exterior surface of the helmet body 1 (an outer shell) and above the brim 14 of the safety helmet, as is shown in Yan’s Figure 2. Ex-1011, ¶19. In my opinion, the two L-shaped slots of the snap-fit slot 11 form an external slot extending upwardly along the front side on the exterior surface of the outer shell above the brim.

94. Additionally, as I describe in Section XV(A)(1), Daley teaches a safety helmet with a shell 22 that includes “integrally-molded portions including ... protrusion 43b.” Ex-1012, 5:37-40. In Figure 3, Daley illustrates the integrally molded **locking ears 42a and 42b** and **protrusion 43b**. Thus, in my opinion, as shown in Figure 3, the protrusion 43b is disposed centrally relative to an external slot formed by the locking ears 42a and 42b and directly onto the exterior surface of the outer shell at an upward location away from the brim.



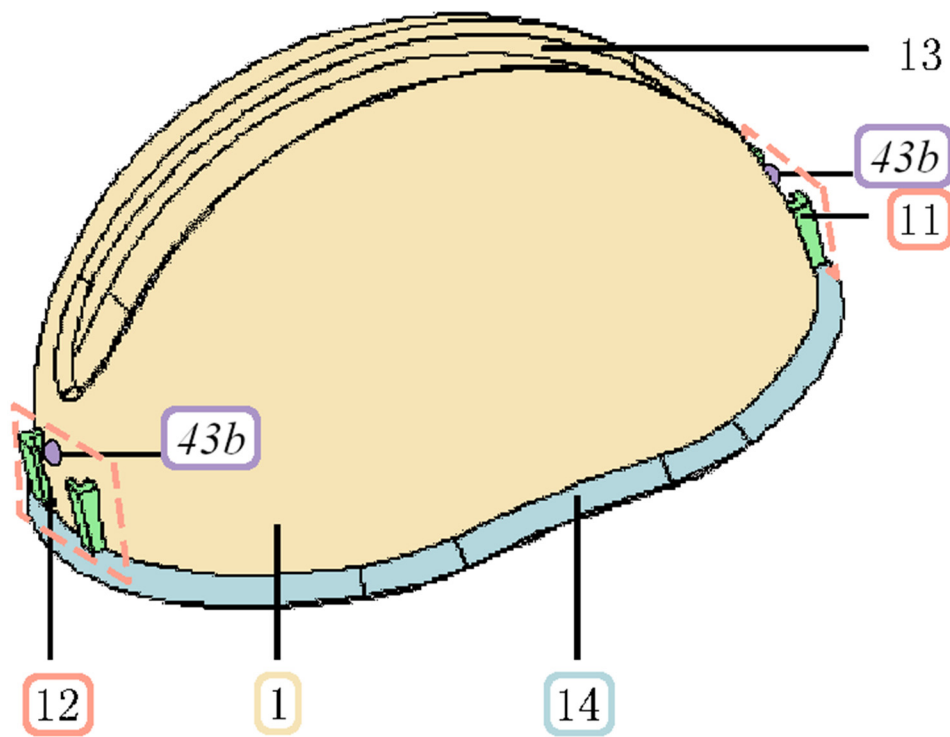
Ex-1012, Fig. 3 (Excerpt)

95. Therefore, in my opinion, the protrusion 43b is a protruding nub that is integrally molded with the outer shell from the common material and is disposed centrally relative to the external slot.

96. I pause here to note that Daley also teaches that feature 43b can be a detent (with the accessory device having a corresponding protrusion 43a), for instance, at Ex-1012, 6:27-36. Daley contemplates both possibilities; however, for purposes of my declaration, Daley's explicit teaching regarding element 43b being a protrusion is sufficient for understanding the obviousness of the '327 Patent.

97. The Yan-Daley helmet incorporates Daley's protrusion 43b with Yan's snap-fit slots, helmet body, and brim. The Yan-Daley helmet incorporates Daley's integral molding teachings. Therefore, in my opinion, the Yan-Daley

helmet teaches a front receptacle (**snap-fit slot 11**) having an external slot (formed by Yan's **L-shaped slots**) extending upwardly along the front side on the exterior surface of the outer shell (**helmet body 1**) above the brim (**brim 14**) and a protruding nub (**protrusion 43b**), wherein the protruding nub is integrally molded with the outer shell from the common material and is disposed centrally relative to the external slot and directly onto the exterior surface of the outer shell at an upward location away from the brim.



Combined Yan-Daley Helmet

f. Element 1[c]

98. Element 1[c] recites “a rear receptacle having an additional external slot disposed on the rear side on the exterior surface of the outer shell, wherein the front receptacle and the rear receptacle are of identical construction.”

99. In my opinion, the rear receptacle is mere duplication of parts as described in Section XI. In my opinion, the results of adding a rear receptacle that is of identical construction as the front receptacle results in a predictable and expected outcome. A POSA would expect that when they duplicate the front receptacle on the rear of a helmet the result is a helmet that is capable of mounting accessories in two places, which is neither surprising nor unexpected.

100. Additionally, in my opinion, the Yan-Daley helmet teaches this element. Yan teaches that “the first snap-fit slot is located at the front of the helmet body, while the second snap-fit slot is located at the rear of the helmet body.” Ex-1011, ¶7. Yan further teaches that the “first snap-fit slot 11 and the second snap-fit slot 12 have **identical structures**, each consisting of two symmetrically arranged L-shaped slots.” Ex-1011, ¶17. Yan also teaches that the “first snap-fit slot 11 and the second snap-fit slot 12 are located above the brim 14.” Ex-1011, ¶19. In Figure 2, Yan illustrates a helmet body 1 with a first snap-fit slot 11 and a second snap-fit slot 12 each located above the brim 14. As I describe in Section XV(A)(2), it would have been obvious to a POSA to add

Daley's protrusion 43b to Yan's snap-fit slots 11 and 12 such that the two snap-fit slots are identical as taught by Yan. In this way, the accessories may be attached to either snap-fit slot as is also taught by Yan. As I discuss above, the Yan-Daley helmet incorporates Daley's protrusion 43b with Yan's snap-fit slot 12. Therefore, in my opinion, the Yan-Daley helmet teaches a rear receptacle (snap-fit slot 12) having an additional external slot disposed on the rear side on the exterior surface of the outer shell, wherein the front receptacle (snap-fit slot 11) and the rear receptacle (snap-fit slot 12) are of identical construction.

g. Element 1[d]

101. Element 1[d] recites "an accessory device having a mating receptacle formed thereon, at least a portion of the mating receptacle being selectively engageable within each of the external slot of the front receptacle or the additional external slot of the rear receptacle such that the accessory device is releasably mountable onto each of the front receptacle and the rear receptacle on the exterior surface of the outer shell."

102. In my opinion, the Yan-Daley helmet teaches this element. Yan teaches that the "mining lamp 3 and the LED lamp 2 are both detachably mounted on the helmet body 1." Yan further teaches that "lamp body base of the mining lamp 3 is adapted to the first snap-fit slot 11. The two sides of the lamp body base can be snapped into the two L-shaped slots of the first snap-fit slot 11." Ex-1011,

¶20. Yan also teaches that the “base of the LED lamp body 22 has the same structure as the base of the mining lamp 3. The two sides of the base of the LED lamp body 22 can be inserted into the two L-shaped slots of the second snap-fit slot 12.” Ex-1011, ¶24. Yan further teaches that “the LED lamp 2 can be taken out of the second snap-fit slot 12 and then inserted into the first snap-fit slot 11.” Ex-1011, ¶27.

103. Furthermore, Yan teaches that “[b]y using this snap-fit connection method, the mining lamp 3 is not fixed permanently on the helmet body 1, but is instead installed on the helmet body 1 in a detachable manner.” Ex-1011, ¶20. Yan also teaches that “[b]y using this snap-fit connection method, the LED lamp 2 is not fixed permanently on the helmet body 1, but is instead installed on the helmet body 1 in a detachable manner.” Ex-1011, ¶24. Thus, in my opinion, Yan’s lamps 2 and 3 each teach the claimed accessory device.

104. Additionally, Daley teaches a headlight assembly 50 that includes “an interlocking trapezoidal-shaped male bracket 46.” Ex-1012, 5:27-31. Daley’s bracket 46 includes a recessed detent 43a, and “[u]pon complete insertion of the male bracket 46 into the locking ears [42a and 42b], the protrusion 43b ‘snaps’ into the detent 43a, thereby temporarily securing the headlight assembly 50 to the shell 22.” Ex-1012, 5:39-43. In my opinion, it would be obvious to a POSA to modify each of lamp 2 and lamp 3 to include Daley’s bracket 46.

105. The Yan-Daley helmet incorporates Yan's lamps 2 and 3 with Daley's bracket 46 added to each. Therefore, in my opinion, Yan-Daley helmet teaches an accessory device (lamp 2) having a mating receptacle (bracket 46) formed thereon, at least a portion of the mating receptacle being selectively engageable within each of the external slot (formed by Yan's L-shaped slots) of the front receptacle (snap-fit slot 11) or the additional external slot of the rear receptacle (snap-fit slot 12) such that the accessory device is releasably mountable onto each of the front receptacle and the rear receptacle on the exterior surface of the outer shell (helmet body 1).

3. Claim 2

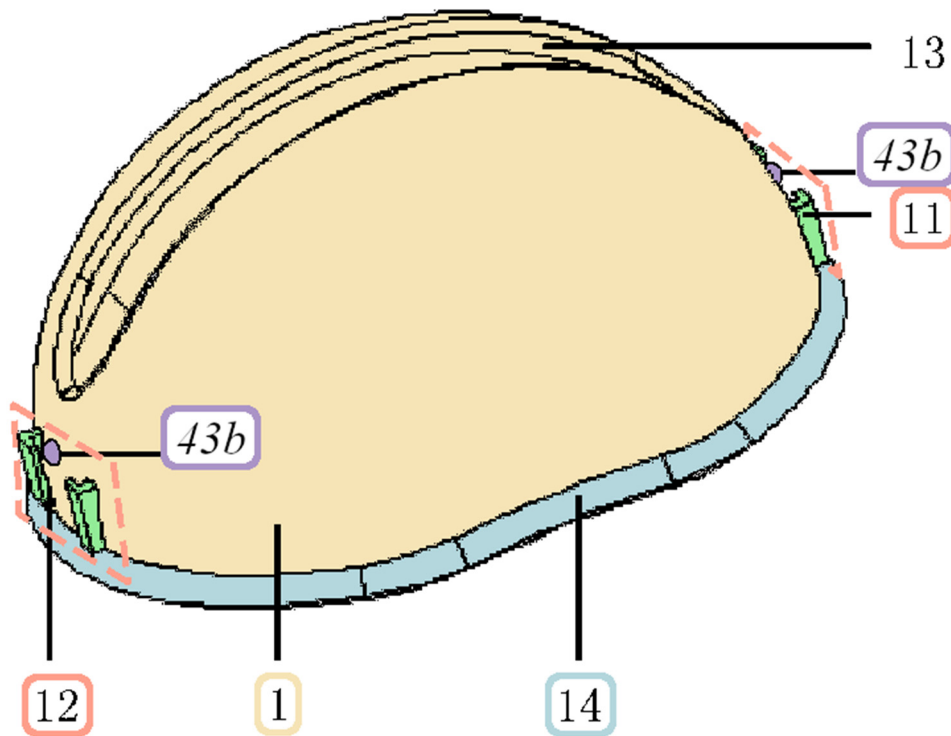
106. In my opinion, all elements of claim 2 are taught by the Yan-Daley helmet. Claim 2 depends from claim 1, and all elements of claim 1 are taught by the Yan-Daley helmet for the reasons I discuss above in Section XV(A)(2). Claim 2 adds elements 2[a] to 2[c], which in my opinion are also taught by the Yan-Daley helmet.

a. Element 2[a]

107. Element 2[a] adds "wherein the external slot of the front receptacle is a receiver slot flanked by raised walls and the protruding nub comprises a stop."

108. In my opinion, the Yan-Daley helmet teaches this element. Daley teaches that the shell 22 includes "integrally-molded portions including ...

protrusion 43b.” Ex-1012, 5:37-40. Adding Daley’s protrusion 43b to Yan’s safety helmet teaches such a receiver slot flanked by raised walls (**L-shaped slots**) with a stop (**protrusion 43b**).



Combined Yan-Daley Helmet

109. I note here that although Yan’s L-shaped slots appear to be parallel, a POSA would have found it obvious to modify Yan’s L-shaped slots to form a tapered snap-fit slot based on Daley’s teachings that “the locking ears 42a, 42b provide mirror-image and diverging ‘L’-shaped appendages being sized and shaped to receive an interlocking trapezoidal-shaped male bracket 46 of the headlight assembly 50.” Ex-1012, 5:27-31.

b. Element 2[b]

110. Element 2[b] adds “wherein the accessory device includes a clip.”

The ’327 Patent does not redefine the term “clip” and thus, in my opinion, a POSA would have understood the term to have its ordinary meaning (*e.g.*, any of various devices that grip, clasp, or hook).

111. Daley teaches that “[u]pon complete insertion of male bracket 46 into the locking ears, the protrusion 43b ‘snaps’ into the detent 43a, thereby temporarily securing the headlight assembly 50 to the shell 22.” Ex-1012, 5:39-43. Therefore, Daley’s bracket 46 operates as a clip by gripping the protrusion 43b while the accessory device is mounted to the helmet. Thus, in my opinion, the Yan-Daley helmet with lamps 2 and 3 modified to include the bracket 46 teaches that the accessory device (lamp 2 or 3) includes a clip (bracket 46). Moreover, even without adding the bracket 46 to the lamps of Yan, each lamp includes a lamp body (lamp body 22) that would function as a clip (*e.g.*, grip) to engage with the protrusion 43b of Daley. Additionally, in my opinion, an obvious design choice would have been to add a detent to the lamp body 22 to engage with the protrusion 43b. Therefore, in my opinion, the Yan-Daley helmet teaches this aspect.

c. Element 2[c]

112. Element 2[c] adds “wherein the receiver slot aligns the accessory device therein, the raised walls retain the accessory device therebetween, and the

stop engages the clip to releasably mount the accessory device in the front receptacle.”

113. The Yan-Daley helmet incorporates Yan’s L-shaped slots, which form the snap-fit slots, and teach the ’327 Patent’s receiver slot. It would be obvious to a POSA that these L-shaped slots align and retain mounted accessory devices. In my opinion, the Yan-Daley helmet teaches that the receiver slot (formed by the L-shaped slots) aligns the accessory device (lamp 2 or 3) therein. Figure 1 of Yan shows lamp 2 aligned within snap-fit slot 12 and lamp 3 aligned within snap-fit slot 11. The Yan-Daley helmet incorporates Daley’s protrusion 43b, which teaches the ’327 Patent’s protruding nub and stop. The Yan-Daley helmet also teaches that the raised walls (the L-shaped slots) retain the accessory device (lamp 2 or 3) therebetween, and the stop (protrusion 43b) engages the clip (bracket 46) to releasably mount the accessory device in the front receptacle (snap-fit slot 11).

114. Therefore, in my opinion, the Yan-Daley helmet teaches all elements of claim 2.

4. Claim 3

115. In my opinion, all elements of claim 3 are taught by the Yan-Daley helmet. Claim 3 depends from claim 1, and all elements of claim 1 are taught by the Yan-Daley helmet as I discuss in Section XV(A)(2). Claim 3 adds “wherein the common material is plastic.”

116. The selection of a known material based on its suitability for its intended use is obvious as described in Section XII. As I describe in Section V, plastic safety helmets were common prior to the earliest priority date the '327 Patent. Therefore, in my opinion, the common material being plastic would have been obvious to a POSA as plastic safety helmets predate the '327 Patent.

5. Claim 4

117. In my opinion, all elements of claim 4 are taught by the Yan-Daley helmet. Claim 4 depends from claim 1, and all elements of claim 1 are taught by the Yan-Daley helmet as I discuss in Section XV(A)(2). The elements of claim 4 are similar to the elements found in claim 2 and my discussion in Section XV(A)(3) applies to claim 4 as well. In my opinion, the Yan-Daley helmet teaches that the accessory device (lamp 2 or 3) includes a clip (bracket 46), the external slot (defined by the L-shaped slots) aligns the accessory device therein, and the protruding nub (protrusion 43b) engages the clip to releasably mount the accessory device in the front receptacle (snap-fit slot 11).

6. Claim 5

118. In my opinion, all elements of claim 5 are taught by the Yan-Daley helmet. Claim 5 depends from claim 1, and all elements of claim 1 are taught by the Yan-Daley helmet as I discuss in Section XV(A)(2). Claim 5 recites “wherein

the external slot of the front receptacle is configured to receive a portion of the accessory device to mount the accessory device to the front receptacle.”

119. In my opinion, the Yan-Daley helmet teaches this additional element of claim 5. Yan teaches that “using this snap-fit connection method, the mining lamp 3 is not fixed permanently on the helmet body 1, but is instead installed on the helmet body 1 in a detachable manner.” Ex-1011, ¶20. As I discuss in Section XV(A)(2)(g), the Yan-Daley helmet teaches that the external slot (defined by the L-shaped slots) of the front receptacle (snap-fit slot 11) is configured to receive a portion (bracket 46) of the accessory device (lamp 2 or 3) to mount (detachably install) the accessory device to the front receptacle.

7. Claim 6

120. In my opinion, all elements of claim 6 are taught by the Yan-Daley helmet. Claim 6 depends from claim 1, and all elements of claim 1 are taught by the Yan-Daley helmet as I discuss in Section XV(A)(2). Claim 6 recites “wherein: the front receptacle includes a first sidewall; the accessory device includes a bracket; and the bracket is retained by the first sidewall to mount the accessory device to the front receptacle.”

121. As I describe above, Yan teaches that each snap-fit slot has “two symmetrically arranged L-shaped slots.” Ex-1011, ¶17. The Yan-Daley helmet incorporates the Yan’s snap-fit slots, each of which includes two L-shaped slots.

Yan's L-shaped slots teach the '327 Patent's sidewalls. Therefore, in my opinion, the Yan-Daley helmet teaches the front receptacle (snap-fit slot 11) includes a first sidewall (one of the L-shaped slots); the accessory device (lamp 2 or 3) includes a bracket (bracket 46); and the bracket is retained by the first sidewall to mount the accessory device to the front receptacle.

8. Claim 7

122. In my opinion, all of the elements of claim 7 are taught by the Yan-Daley helmet. Claim 7 depends from claim 6, which depends from claim 1. Each element of these claims is taught by the Yan-Daley helmet as I discuss in Section XV(A)(2) and Section XV(A)(7). Claim 7 recites "wherein: the front receptacle includes a second sidewall; and the bracket is retained by the first sidewall and the second sidewall."

123. As I describe in Section XV(A)(7), in my opinion, the Yan-Daley helmet teaches that the front receptacle (snap-fit slot 11) includes a second sidewall (one of the L-shaped slots); and the bracket (bracket 46) is retained by the first sidewall (the other L-shaped slot) and the second sidewall.

9. Claim 8

124. In my opinion, all elements of claim 8 are taught the Yan-Daley helmet.

a. Element 8[pre] to 8[c]

125. Elements 8[pre] to 8[c] recite a safety helmet having an outer shell, a front receptacle, a rear receptacle, and a first accessory device that have features that were all found in elements 1[pre] to 1[c], so, in my opinion, most of elements 8[pre] to 8[c] are taught or suggested by the Yan-Daley helmet for the reasons discussed above in Section XV(A)(2).

126. As compared to element 1[b], Element 8[b] adds “the front receptacle being integrally molded with the outer shell.” In my opinion, this is also taught or suggested by the Yan-Daley helmet.

127. As I describe in Section XV(A)(1), Daley teaches “a first locking ear 42a and a second locking ear 42b, for example, being integrally-molded into the shell 22.” Ex-1012, 5:25-27. Daley further teaches that the shell 22 includes “integrally-molded portions including ... protrusion 43b.” Ex-1012, 5:37-40.

128. Therefore, as I describe in Section XV(A)(1), in my opinion, a POSA would have found it obvious to apply Daley’s integral molding teachings to the safety helmet in Yan to form snap-fit slots, which teach the ’327 Patent’s receptacles, and protrusions on the Yan-Daley safety helmet. Therefore, in my opinion, the Yan-Daley helmet teaches this aspect.

b. Element 8[d]

129. Element 8[d] recites “a first accessory device having a first mating receptacle formed thereon, at least a portion of the first accessory device being releasably mountable onto each of the front receptacle or the rear receptacle on the exterior of the outer shell.”

130. As I describe in Section XV(A)(2)(g), in my opinion, the Yan-Daley helmet teaches a first accessory device (lamp 2 or 3) having a first mating receptacle (bracket 46). As I describe in Section XV(A)(1), in my opinion, a POSA would have found it obvious to include the bracket 46 on the lamp body (lamp body 22) of each of Yan’s lamp 2 and 3. In my opinion, the Yan-Daley helmet also teaches at least a portion (bracket 46) of the first accessory device (lamp 2 or 3) being releasably mountable onto each of the front receptacle (snap-fit slot 11) or the rear receptacle (snap-fit slot 12) on the exterior of the outer shell (helmet body 1).

c. Element 8[e]

131. Element 8[e] recites “a second accessory device having a second mating receptacle formed thereon, at least a portion of the second accessory device being releasably mountable onto each of the front receptacle or the rear receptacle on the exterior of the outer shell.”

132. In my opinion, the second accessory device is mere duplication of parts. I've been informed that such duplication has no patentable significance unless a new and unexpected result is produced as described in Section XI. In my opinion, having multiple accessory devices that are mountable in the receptacles is neither new nor unexpected. A POSA would expect that when they have two accessories with respective mating receptacles the result is being able to mount either accessory in either receptacle, which is neither surprising nor unexpected.

133. Additionally, it is my opinion that the Yan-Daley helmet teaches this element. As I describe in Section XV(A)(2)(g), Yan teaches that the “mining lamp 3 and the LED lamp 2 are both detachably mounted on the helmet body 1.” Ex-1011, ¶15. Thus, in my opinion, Yan's mining lamp 3 and LED lamp 2 each teaches the claimed second accessory device.

10. Claims 9 and 12

134. In my opinion, all elements of claims 9 and 12 are taught by the Yan-Daley helmet. Claims 9 and 12 depend from claim 8, and all elements of claim 8 are taught by the Yan-Daley helmet as I discuss in Section XV(A)(9). Claim 9 recites “the external slot ... includes a receiver slot ... including a **stop**,” and claim 12 recites “the external slot ... includes a receiver slot ... including a **protruding nub**.” Claim 2 recites “the external slot ... is a receiver slot flanked by raised walls and **the protruding nub comprises a stop**.” The Yan-Daley helmet

incorporates Daley's protrusion 43b, which teaches the '327 Patent's protruding nub and stop. The Yan-Daley helmet teaches each of these recitations as I discuss with respect to claim 2 in Section XV(A)(3).

11. Claim 10

135. In my opinion, all elements of claim 10 are taught by the Yan-Daley helmet. Claim 10 depends from claim 8, and all elements of claim 8 are taught by the Yan-Daley helmet as I discuss in Section XV(A)(9). Claim 10 states that the common material is "a molded plastic material" rather than just "plastic" as claim 3 recites. As with plastic, in my opinion, a molded plastic material is a known material selected based on its suitability for its intended use. Thus, in my opinion, the Yan-Daley helmet teaches the elements of claim 10 for the reasons I discuss above with respect to claim 3 in Section XV(A)(4).

12. Claim 11

136. In my opinion, all elements of claim 11 are taught by the Yan-Daley helmet. Claim 11 depends from claim 8, and all elements of claim 8 are taught by the Yan-Daley helmet as I discuss in Section XV(A)(9). Claim 11 recites "where in the front receptacle and the rear receptacle are of identical construction." This feature is found in element 1[c] and thus, in my opinion, taught by the Yan-Daley helmet for the reasons I discuss in Section XV(A)(2)(f).

13. Claims 13-15

137. In my opinion, all elements of claims 13-15 are taught by the Yan-Daley helmet. Claims 13 and 14 depend from claim 8, and claim 15 depends from claim 14, all elements of claim 8 are taught by the Yan-Daley helmet as I discuss in Section XV(A)(9). Claims 13 to 15 include features found in claims 5 to 7, respectively, merely referring to a “first accessory device” rather than an “accessory device.” This difference is not substantive. Thus, in my opinion, the Yan-Daley helmet teaches or suggests the features of claims 13-15 for the reasons I discuss above with respect to claims 5-7, respectively, in Sections XV(A)(6)-XV(A)(8).

14. Claim 16

138. In my opinion, all elements of claim 16 are taught by the Yan-Daley helmet.

a. Elements 16[pre], 16[a], 16[c], and 16[d]

139. Elements 16[pre], 16[a], 16[c], and 16[d] recite a safety helmet having an outer shell, a front receptacle, a rear receptacle, and a first accessory device that have features that are all found in elements 1[pre], 1[a], 1[c], and 1[d], respectively. Thus, in my opinion, the Yan-Daley helmet teaches or suggests these features for reasons I stated earlier in Sections XV(A)(2)(a), XV(A)(2)(b), XV(A)(2)(f), and XV(A)(2)(g).

b. Element 16[b]

140. Element 16[b] is similar to element 1[b], distinguished by reciting “a protruding nub, wherein the outer shell forms the protruding nub from a same material as the outer shell.” In my opinion, the Yan-Daley helmet teaches this element. As I discuss in Section XV(A)(2)(e), the Yan-Daley helmet teaches a protruding nub (protrusion 43b). Additionally, as I discuss in Section XV(A)(1), it would have been obvious to a POSA to form the protruding nub, taught by protrusion 43b, from a same (*i.e.*, common) material as the outer shell, taught by helmet body 1.

15. Claim 17

141. In my opinion, all elements of claim 17 are taught by the Yan-Daley helmet.

a. Elements 17[pre] to 17[d]

142. Elements 17[pre] to 17[d] recite a safety helmet having features found in both elements 16[pre] to 16[d] and elements 1[pre] to 1[d]. Element 17[c] recites “a rear receptacle having an additional external slot disposed on the rear side on the exterior of the outer shell, the rear receptacle having an additional protruding nub disposed centrally relative to the additional external slot, the additional protruding nub being integrally molded with the outer shell on the exterior from the common material” whereas element 1[c] recites “wherein the

front receptacle and the rear receptacle are of identical construction,” as I discuss in Section XV(A)(2)(f). Thus, element 17[c] recites components of the rear receptacle that are the same as the components of the front receptacle, while element 1[c] recites that the receptacles are of identical construction. Accordingly, in my opinion, the Yan-Daley helmet teaches these features for reasons I discuss in Sections XV(A)(14) and XV(A)(2).

b. Element 17[e]

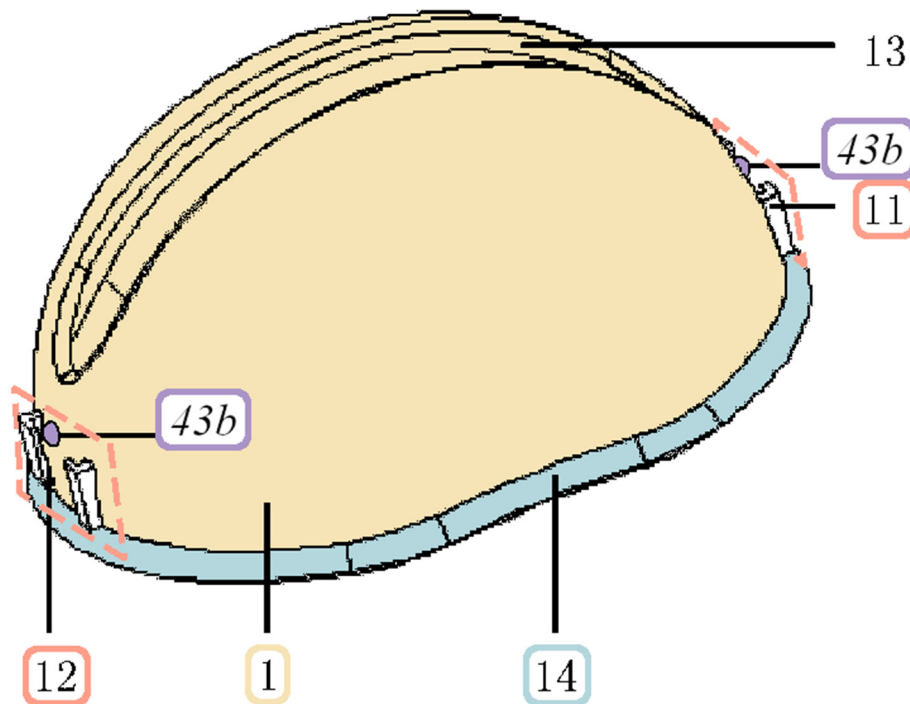
143. Element 17[e] recites a second accessory device that is substantially identical to element 8[e]. Thus, element 17[e] is mere duplication of parts as I discuss in Section XV(A)(9)(c). Moreover, the Yan-Daley helmet teaches or suggests these features for the reasons I discuss in Section XV(A)(9)(c).

c. Element 17[f]

144. Element 17[f] recites “wherein the brim, the front receptacle, and the rear receptacle are a unitary feature of the outer shell.”

145. In my opinion, the Yan-Daley helmet teaches this element.

146. Yan teaches “**helmet body 1** comprises a first **snap-fit slot 11**, a second **snap-fit slot 12**, a guide groove 13, and a **brim 14**.” Ex-1011, ¶16. Yan further teaches that “[t]he first snap-fit slot 11 and the second snap-fit slot 12 have identical structures.” Ex-1011, ¶17. Moreover, as I discuss in Section XV(A)(1), in my opinion, the Yan-Daley helmet teaches integrally molding such features.



Combined Yan-Daley Helmet

147. I note that Patent Owner uses the term “unitary” interchangeably with “formed by” and “integral.” Ex-1004, 44, 74. During prosecution, Patent Owner indicated that “unitary” means “having the character of a unit in being undivided from, or a whole with.” Ex-1004, 171. Further, I understand this definition of unitary as being broader than but covered by the “integrally molded” language of claims 1 and 8. In my opinion, Figure 2 of Yan modified to include Daley’s protrusion, as shown above, teaches the brim, front receptacle, and rear receptacle being unitary features of the helmet body. Moreover, in my opinion, the Yan-Daley helmet teaches this “unitary” feature for at least the reasons I discuss for claims 1 and 8 in Sections XV(2) and XV(9).

148. Yan teaches that “the helmet body 1 comprises a first snap-fit slot 11, a second snap-fit slot 12, a guide groove 13, and a brim 14.” Ex-1011, ¶16. The Yan-Daley helmet incorporates the snap-fit slots and brim from Yan. Therefore, in my opinion, the Yan-Daley helmet teaches that the brim (brim 14), the front receptacle (snap-fit slot 11), and the rear receptacle (snap-fit slot 12) are a unitary feature of the outer shell (helmet body 1).

149. Additionally, in my opinion, a POSA would have found it obvious to make the brim, front receptacle, and rear receptacle unitary features of the outer shell using the molding teachings of Daley, as I explained above in Section XV(A)(2)(b). Thus, in my opinion, the Yan-Daley helmet teaches or suggests a safety helmet having a brim, front receptacle, and rear receptacle that are a unitary feature of the outer shell.

B. Claims 2, 4, 9, and 12 in View of Yan, Daley, and Kiessler

1. Combining Yan, Daley, and Kiessler

150. In my opinion, Kiessler (like Yan and Daley) qualifies as analogous art at least because it is in the same field of endeavor as the '327 Patent, i.e., safety helmets. Ex-1015, ¶1. At minimum, in my opinion, all references are at least reasonably pertinent to at least one problem allegedly solved by the claimed invention—mounted accessories slipping off from safety helmets. Ex-1001, 1:27-

38. In my opinion, ample motivation-to-combine Kiessler's teachings to modify the Yan-Daley helmet also existed.

151. In the Yan-Daley combination, Daley describes the need to address task illumination (*e.g.*, a light being aimed in the right direction). Ex-1012, 1:27-35, 47-51. Daley teaches that "the headlight assembly 50" provides a spot-light effect. Ex-1012, 5: 1-7. In building the Yan-Daley helmet and in view of these disclosures, in my opinion, a POSA would have been motivated to look to analogous references (including Kiessler), *e.g.*, to help identify ways of providing an adjustable spot-light effect to improve task illumination.

152. In my opinion, upon reviewing the analogous Kiessler reference, a POSA would have seen its teachings related to using a lamp 3 (accessory device) with a clamping lever 21 (clip) in conjunction with a helmet receptacle having a groove head (protruding nub) and would have been motivated to modify the Yan-Daley helmet to include such features, *e.g.*, to allow the lamp to be aligned relative to the helmet. Ex-1015, ¶13. As taught by Kiessler, including such features in the Yan-Daley helmet would also improve temporarily securing accessories in the snap-fit slot structures. For example, Kiessler (Ex-1015, ¶5) recites that "The invention relates to a device for attaching a lamp to a helmet, which ensures that the lamp is securely fixed to the helmet even when subjected to vertical impacts

from below. The latching means prevents the fixture from slipping out of the receptacle.”

153. In my opinion, adding Kiessler’s clamping lever 21 and groove head 13 to the Yan-Daley helmet would have been routine for a POSA exercising only ordinary skill (*e.g.*, neither addition requires new techniques), so the modification would have been achieved with a reasonable expectation of success.

154. Additionally, in my opinion, modifying the Yan-Daley helmet to include Kiessler’s clamping lever 21 and groove head 13 features would have been obvious to try because there are only a finite number of predictable solutions for improving adjustable task illumination via a safety helmet lamp. In my opinion, a POSA seeking to improve the Yan-Daley helmet’s task illumination functionality, would have recognized that incorporating Kiessler’s clip-based accessory devices involved known methods (*e.g.*, molding) and had a predictable result. In this case, the result would be a safety helmet with front and rear receiver slots for clip-based accessory devices.

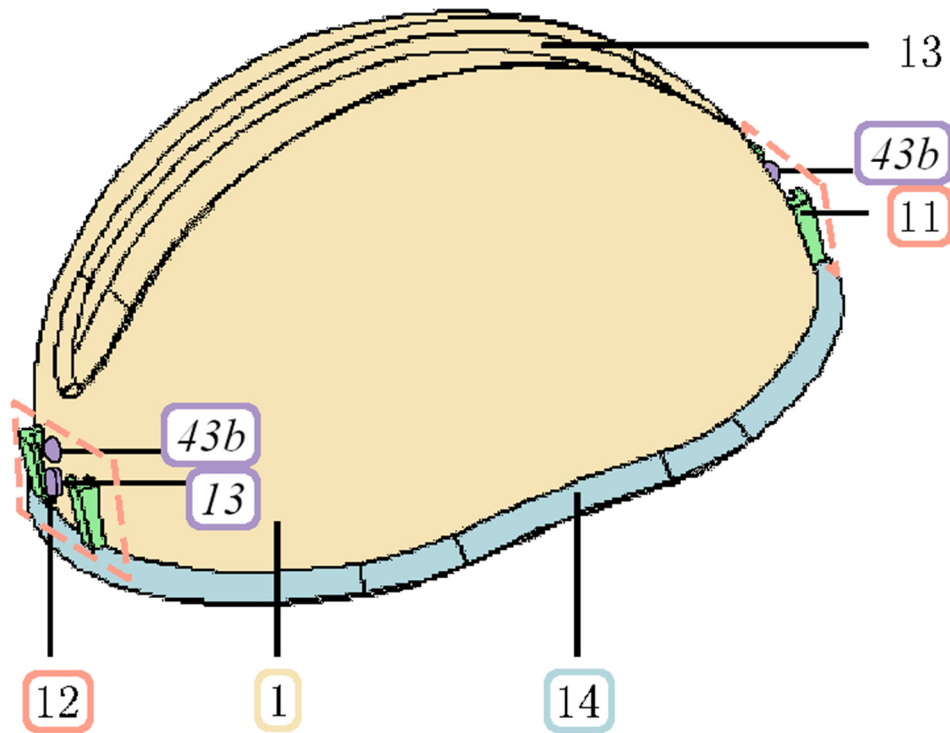
2. Claim 2

155. In my opinion, all elements of claim 2 are taught by the Yan-Daley-Kiessler helmet described in Section XV(B)(1). Claim 2 depends from claim 1, and all elements of claim 1 are taught by the Yan-Daley helmet as I discuss in

Section XV(A)(2). Claim 2 adds elements 2[a] to 2[c], which are taught by the Yan-Daley-Kiessler helmet.

a. Element 2[a]

156. If the receiver slot requires tapering, this is taught by Daley as I discuss in Section XV(A)(3)(a). As illustrated below, in my opinion, the Yan-Daley-Kiessler helmet teaches the external slot of the front receptacle (**snap-fit slot 11**) being a receiver slot flanked by raised walls (**L-shaped slots**). In my opinion, the combination further teaches the protruding nub including a stop (**groove head 13**). Ex-1015, ¶36. An example depiction of the Yan-Daley-Kiessler helmet is shown below. The modified figure represents Yan's helmet depicted in Yan's Figure 2 modified to include Daley's protrusion 43b and Kiessler's groove head 13. Yan's lamp accessories (lamps 2 and 3) modified to include Kiessler's clamping lever 21 would engage with the groove head 13 via the recess 213, as taught by Kiessler. Ex-1015, ¶39. When mounted, the modified lamp accessories would abut the protrusion 43b at the top of the clamping lever 23, which would further secure the modified accessories.



Combined Yan-Daley-Kiessler Helmet

b. Element 2[b]

157. The Yan-Daley-Kiessler helmet modifies Yan’s lamp 3 to include Kiessler’s clamping lever 21. Yan’s lamp 3 teaches the ’327 Patent’s accessory device and Kiessler’s clamping lever 21 teaches the ’327 Patent’s clip. Therefore, in my opinion, and as I describe in Section XV(B)(1), the Yan-Daley-Kiessler helmet teaches an accessory device (lamp 3) that includes a clip (clamping lever 21).

c. Element 2[c]

158. Element 2[c] adds “wherein the receiver slot aligns the accessory device therein, the raised walls retain the accessory device therebetween, and the

stop engages the clip to releasably mount the accessory device in the front receptacle.”

159. In my opinion, a POSA would have understood that the L-shaped slots in the Yan-Daley-Kiessler helmet align and retain lamp 2 (or lamp 3) as the groove head 13 engages with the clamping lever 21. Therefore, in my opinion, the Yan-Daley-Kiessler helmet teaches that the receiver slot (defined by L-shaped slots) aligns the accessory device (lamp 2 or 3) therein, the raised walls (L-shaped slots) retain the accessory device therebetween, and the stop (groove head 13) engages the clip (clamping lever 21) to releasably mount the accessory device in the front receptacle (snap-fit slot 11).

160. For the above reasons, in my opinion, the Yan-Daley-Kiessler helmet teaches all elements of claim 2.

3. Claim 4

161. Claim 4 depends from claim 1, and all elements of claim 1 are taught by the Yan-Daley helmet as I discuss in Section XV(A)(2). In my opinion, all elements of claim 4 are taught by the Yan-Daley-Kiessler helmet.

162. The features of claim 4 are similar to features of claim 2, which I discuss in Section XV(B)(2). In my opinion, the Yan-Daley-Kiessler helmet teaches the additional elements of claim 4: that the accessory device (lamp 2 or 3) includes a clip (clamping lever 21), the external slot (defined by the L-shaped

slots) aligns the accessory device therein, and the protruding nub (groove head 13) engages the clip to releasably mount the accessory device in the front receptacle (snap-fit slot 11).

4. Claims 9 and 12

163. In my opinion, all elements of claims 9 and 12 are taught by the Yan-Daley-Kiessler helmet. Claims 9 and 12 depend from claim 8, and all elements of claim 8 are taught by the Yan-Daley helmet as I discuss in Section XV(A)(9). The features of claims 9 and 12 are found within claim 2. Claim 9 recites a “stop” while claim 12 recites a “protruding nub” and claim 2 recites “the protruding nub comprises a stop” as I note in Section XV(A)(10). Accordingly, in my opinion, the Yan-Daley-Kiessler helmet teaches all elements of claims 9 and 12 for the reasons I discuss with respect to claim 2 in Section XV(B)(2).

C. Claims 1 to 17 in View of Yan and Nesbitt

1. Combining Yan and Nesbitt

164. As a threshold matter, in my opinion, Yan and Nesbitt qualify as analogous art at least because they are in the same field of endeavor as the ’327 Patent, i.e., safety helmets. Ex-1001, 3:26-27; Ex-1011, ¶1; Ex-1013, 1:5-7. At minimum, in my opinion, both references are at least reasonably pertinent to at least one problem allegedly solved by the claimed invention—mounted devices

slipping off from safety helmets. Ex-1001, 1:27-38; Ex-1013, 2:22-33. In my opinion, ample motivation-to-combine also existed.

165. First, in my opinion, Yan invites a POSA to seek out “equivalent structural modifications.” Ex-1011, ¶29. Based on this, in my opinion, a POSA would have been expressly motivated to look to analogous references (including Nesbitt), e.g., to help understand certain aspects related to structural modifications of the snap-fit slot structures (particularly when seeking to construct Yan’s safety helmet).

166. In my opinion, upon reviewing the analogous Nesbitt reference, a POSA would have seen its teachings related to using a plurality of integrally formed sockets at different locations on a safety helmet, each having a respective nub, to detachably retain devices (Ex-1013, 2:22-31), and would have been motivated to modify each of Yan’s snap-fit slot structures to be molded to the helmet body and include such a nub. Modifying each of the snap-fit slots in this manner would keep the snap-fit slots identical and allow for accessories to be detachably mounted to either slot in an identical manner as taught by Yan. Ex-1011, ¶25.

167. In my opinion, when modifying Yan’s snap-fit slot structures to include Nesbitt’s nubs, a POSA could adopt the teachings of Nesbitt to integrally mold the receptacle (e.g., Yan’s L-shaped slots) with a nub to the safety helmet

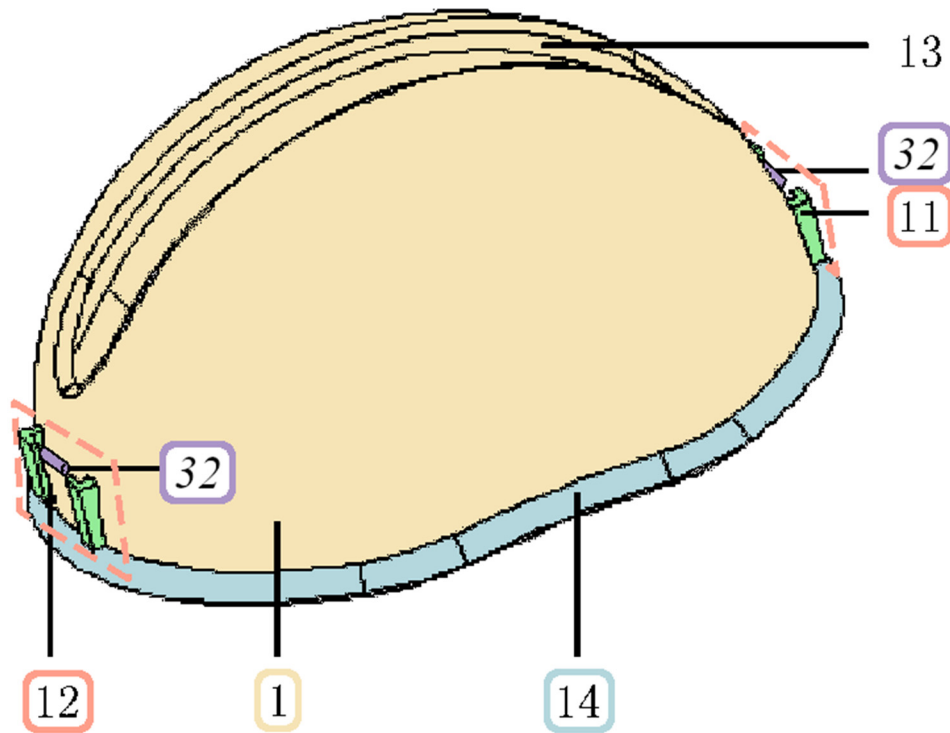
shell for each snap-fit slot using at least one common (*i.e.*, same) material, such as polyethylene. Ex-1013, 2:57-67. In my opinion, the POSA could also adopt Nesbitt's positional teaching for each nub to centrally position the protrusion between the L-shaped slots in Yan. Ex-1013, Fig. 8. In my opinion, forming such features from a common material would have been cheaper, easier, and allowed for a reduced sales price for the Yan-Nesbitt helmet, which would have further motivated the Yan-Nesbitt combination.

168. In my opinion, including the nub feature with the snap-fit slot structures would create a more robust securing of the accessories in the snap-fit slot structures and thus would have been a desirable structural modification. In my opinion, having a more robust securing would have made the Yan-Nesbitt helmet more attractive to potential purchasers, thereby further motivating the combination as a matter of commercial desirability.

169. In my opinion, a POSA would have been motivated to incorporate Nesbitt's centrally located and integrally molded nub into each of Yan's snap-fit slot structures to securely mount detachable accessory devices while keeping the snap-fit slots identical. In my opinion, adding Nesbitt's nub to Yan's snap-fit slot structures would have been routine for a POSA exercising only ordinary skill, so the modification would have been achieved with a reasonable expectation of success.

170. Additionally or alternatively, in my opinion, modifying Yan's safety helmet to include Nesbitt's integrally molded mounting features would have been obvious to try because there are only a finite number of predictable solutions for improving the temporary security of the snap-fit slots. In my opinion, modifying Yan's safety helmet to include Nesbitt's integrally molded mounting features would also have been a simple substitution of one element (a receptacle having L-shaped slots and nub 32) for another (a snap-fit slot receptacle having only L-shaped slots) to obtain predictable results. In this case, the results are an integrally molded receptacle having a protruding nub to more securely fasten Yan's lamp accessories. In my opinion, a POSA seeking to improve Yan's snap-fit slot structure for temporarily securing accessory devices, would have recognized that incorporating Nesbitt's integrally molded socket features involved a known method of molding and had a predictable result. The result being a molded receptacle having a protruding nub for more securely snapping in detachable accessory devices.

171. An example depiction of the combination Yan-Nesbitt safety helmet is below. The modified figure represents Yan's helmet depicted in Yan's Figure 2 modified to include Nesbitt's nub 32 at each snap-fit slot.



Combined Yan-Nesbitt Helmet

2. Claim 1

172. In my opinion, all elements of claim 1 are taught by the Yan-Nesbitt helmet.

a. Element 1[pre]

173. In my opinion, the Yan-Nesbitt helmet teaches this element.

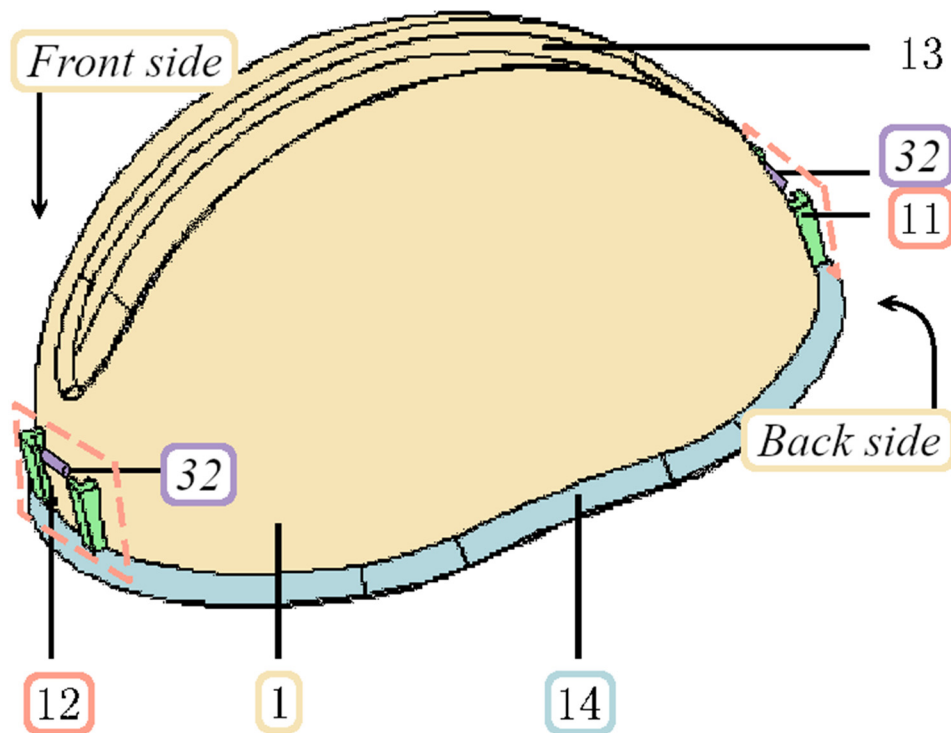
174. Yan teaches “a safety helmet, and more specifically, ... a mining safety helmet with an emergency lighting function.” Ex-1011, ¶1. Yan’s safety helmet is modified to include Nesbitt’s nub 32 and, thus, the Yan-Nesbitt helmet teaches a safety helmet.

b. Element 1[a][i]

175. In my opinion, the Yan-Nesbitt helmet teaches this element.

176. First, in my opinion, the Yan-Nesbitt helmet teaches an outer shell adapted to be worn by a user. Yan teaches that “[t]he mining safety helmet is an essential tool for miners working underground” and that “[i]t not only provides lighting but also effectively protects the miner’s head from falling objects.” Ex-1011, ¶2. Yan also teaches that the safety helmet includes a “helmet body 1.” Ex-1011, ¶16. In my opinion, Yan’s helmet body is an outer shell adapted to be worn by a user. Therefore, in my opinion, the Yan-Nesbitt helmet teaches such an outer shell adapted to be worn by a user.

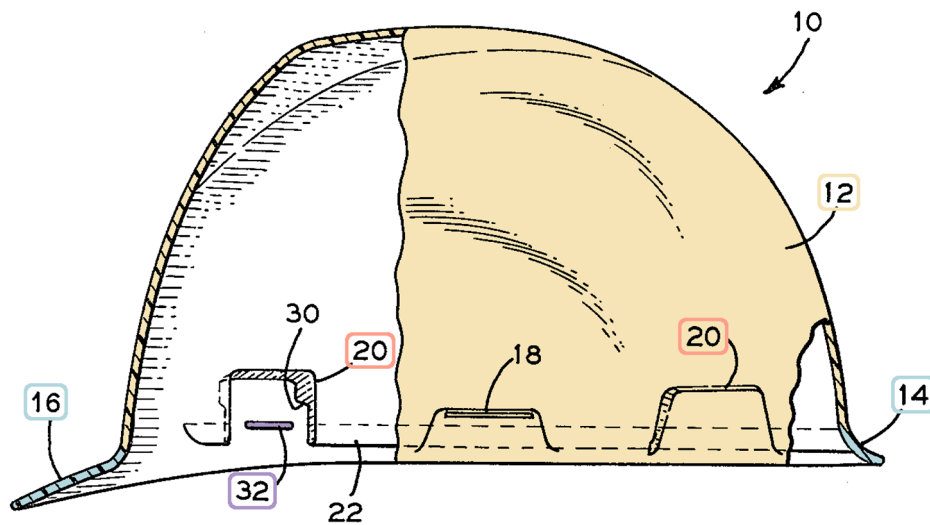
177. Second, in my opinion, the Yan-Nesbitt helmet teaches the outer shell having an exterior surface defining a front side, a rear side, and a brim extending forward from the front side and configured to shield the user’s eyes from sunlight or falling debris. Yan teaches that “brim 14 is located at the bottom of the helmet body 1 and encircles the bottom edge of the helmet body 1.” Ex-1011, ¶19. In my opinion, a brim encircling the bottom edge of the helmet body extends forward from the front side. Yan further teaches that the “function of the brim 14 is to enhance protective coverage, effectively preventing small falling debris from entering the miner’s eyes, ears, mouth, or nose.” Ex-1011, ¶19.



Combined Yan-Nesbitt Helmet

178. Therefore, in my opinion, the Yan-Nesbitt helmet teaches such an outer shell (helmet body 1) having an exterior surface defining a front side, a rear side, and a brim (brim 14).

179. Third, in my opinion, the Yan-Nesbitt helmet teaches or suggests being molded from a common material. Nesbitt includes a line drawing, Figure 8, that illustrates a cross-sectional view of the shell 12 showing consistent unbroken lines and the same cross-hatching pattern throughout the shell and brim of the safety helmet. Therefore, in my opinion, Nesbitt teaches a brim that is unitary with and molded from a common material (*e.g.*, polyethylene) with the helmet shell.



Ex-1013, Fig. 8

180. Additionally, Nesbitt teaches a safety helmet with a **shell 12** that includes “plurality of **sockets 20** ... integrally molded into the **shell 12**.” Ex-1013, 2:65-67. Nesbitt further teaches “Lands 30 bridge the **shell 12** with the end surfaces 26 over the recess 28. **Nub 32** partially extends into the recess 28.” Ex-1013, 3:1-7. Thus, in my opinion, the **nub 32** is a protruding nub that is integrally molded with the **shell** from the common material and is disposed centrally relative to the socket.

181. In my opinion, a POSA would have found it obvious to mold Yan’s shell using a common material throughout (as Nesbitt teaches). Therefore, in my opinion, the Yan-Nesbitt helmet teaches an outer shell (helmet body 1) adapted to be worn by a user, the outer shell being molded from a common material (*e.g.*, polyethylene) and having an exterior surface defining a front side, a rear side, and

a brim (brim 14) extending forward from the front side and configured to shield the user's eyes from sunlight or falling debris.

c. Element 1[a][ii]

182. In my opinion, the Yan-Nesbitt helmet teaches or suggests this element.

183. In my opinion, the Yan-Nesbitt helmet is capable of being worn in reverse on a user's head as desired. In my opinion, the claim does not include any structure that differentiates a "reversible" helmet from any other safety helmets, such as those taught by Yan and Nesbitt. Moreover, workers have often worn their safety helmets backwards, as acknowledged by the inventors and noted in Section XV(A)(2)(c). To the extent the reversibility feature is not inherent, in my opinion, it would have been an obvious modification to make the Yan-Nesbitt helmet reversible to capture more sales from users wanting reversible helmets.

d. Element 1[a][iii]

184. In my opinion, the Yan-Nesbitt helmet teaches this element. As I discuss above in Section XV(A)(2)(b), Yan teaches a "brim 14" that "encircles the bottom edge of the helmet body 1." Ex-1011, ¶19. Such a brim would be disposed above the face of the user when the outer shell is worn by the user with the front side being oriented above the face of the user. Therefore, in my opinion, the Yan-Nesbitt helmet teaches this aspect.

e. Element 1[b]

185. In my opinion, the Yan-Nesbitt helmet teaches this element.

186. First, Yan teaches a snap-fit slot 11 (a front receptacle) that is located on an exterior surface of the helmet body 1 (an outer shell) and above the brim 14 of the safety helmet. Ex-1011, ¶19. In my opinion, the two L-shaped slots of the snap-fit slot 11 form an external slot extending upwardly along the front side on the exterior surface of the outer shell above the brim. The Yan-Nesbitt helmet incorporates Yan's snap-fit slots and brim and therefore teaches these elements.

187. Additionally, as I describe in Section XV(C)(2)(b), Nesbitt teaches a safety helmet with a shell 12 that includes "plurality of sockets 20 ... integrally molded into the shell 12" (Ex-1013, 2:65-67) with each socket comprising a nub 32 (Ex-1013, 3:1-7). Thus, in my opinion, the nub 32 is a protruding nub that is integrally molded with the shell from the common material and is disposed centrally relative to the external slot.

188. Therefore, in my opinion, the Yan-Nesbitt helmet teaches a front receptacle (snap-fit slot 11) having an external slot (formed by Yan's L-shaped slots) extending upwardly along the front side on the exterior surface of the outer shell (helmet body 1) above the brim (brim 14) and a protruding nub (nub 32), wherein the protruding nub is integrally molded with the outer shell from the common material (*e.g.*, polyethylene) and is disposed centrally relative to the

external slot and directly onto the exterior surface of the outer shell at an upward location away from the brim.

f. Element 1[c]

189. The rear receptacle is mere duplication of parts without a new and unexpected result, as I discuss above in Section XV(A)(2)(f). Additionally, in my opinion, the Yan-Nesbitt helmet teaches this element.

190. Yan teaches that “the first snap-fit slot is located at the front of the helmet body, while the second snap-fit slot is located at the rear of the helmet body.” Ex-1011, ¶7. Yan further teaches that the “first snap-fit slot 11 and the second snap-fit slot 12 have **identical structures**, each consisting of two symmetrically arranged L-shaped slots.” Ex-1011, ¶17.

191. As I discuss in Section XV(C)(1), a POSA would have found it obvious to add Nesbitt’s nub 32 to each of Yan’s snap-fit slots 11 and 12 such that the two snap-fit slots are identical, and accessories may be attached to either snap-fit slot, as taught by Yan.

192. Therefore, in my opinion, the Yan-Nesbitt helmet teaches a rear receptacle (snap-fit slot 12) having an additional external slot disposed on the rear side on the exterior surface of the outer shell, wherein the front receptacle (snap-fit slot 11) and the rear receptacle (snap-fit slot 12) are of identical construction.

g. Element 1[d]

193. In my opinion, the Yan-Nesbitt helmet teaches this element.

194. Yan teaches that the “mining lamp 3 and the LED lamp 2 are both detachably mounted on the helmet body 1.” Yan further teaches that “lamp body base of the mining lamp 3 is adapted to the first snap-fit slot 11. In my opinion, the two sides of the lamp body base can be snapped into the two L-shaped slots of the first snap-fit slot 11.” Ex-1011, ¶20. Yan also teaches that the “base of the LED lamp body 22 has the same structure as the base of the mining lamp 3. The two sides of the base of the LED lamp body 22 can be inserted into the two L-shaped slots of the second snap-fit slot 12.” Ex-1011, ¶24. Yan further teaches that “the LED lamp 2 can be taken out of the second snap-fit slot 12 and then inserted into the first snap-fit slot 11.” Ex-1011, ¶27.

195. Furthermore, Yan teaches that “[b]y using this snap-fit connection method, the mining lamp 3 is not fixed permanently on the helmet body 1, but is instead installed on the helmet body 1 in a detachable manner” (Ex-1011, ¶20) and “[b]y using this snap-fit connection method, the LED lamp 2 is not fixed permanently on the helmet body 1, but is instead installed on the helmet body 1 in a detachable manner” (Ex-1011, ¶24). Thus, in my opinion, Yan’s lamps 2 and 3 each teach the claimed accessory device. The Yan-Nesbitt helmet incorporates Yan’s lamps 2 and 3.

196. Yan's lamp 2 has a lamp body 22, which teaches the '327 Patent's mating receptacle and portion that is mountable onto the receptacles of the helmet. Ex-1011, ¶21. Therefore, in my opinion, Yan-Nesbitt helmet teaches an accessory device (lamp 2) having a mating receptacle (lamp body 22) formed thereon, at least a portion of the mating receptacle being selectively engageable within each of the external slot (formed by Yan's L-shaped slots) of the front receptacle (snap-fit slot 11) or the additional external slot of the rear receptacle (snap-fit slot 12) such that the accessory device is releasably mountable onto each of the front receptacle and the rear receptacle on the exterior surface of the outer shell (helmet body 1).

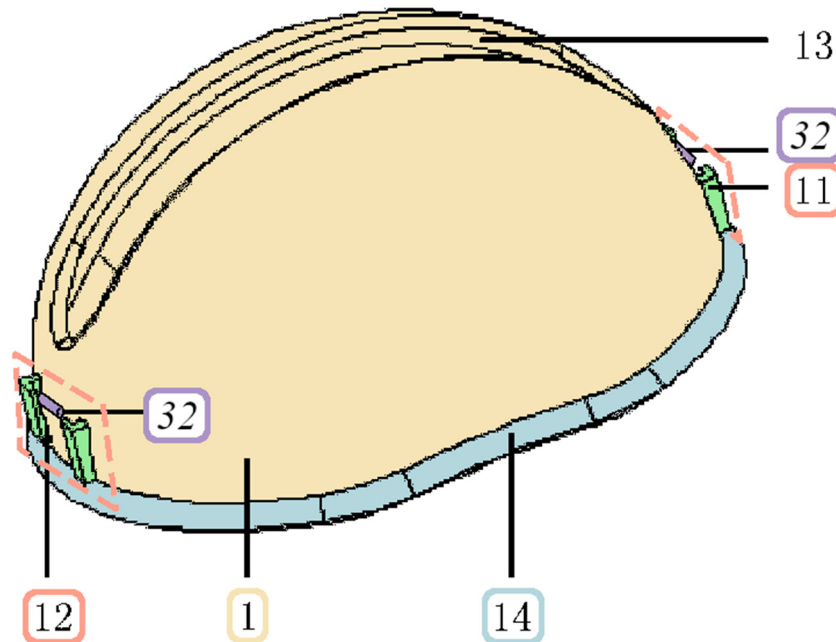
3. Claim 2

197. In my opinion, all elements of claim 2 are taught by the Yan-Nesbitt helmet. Claim 2 depends from claim 1, and all elements of claim 1 are taught by the Yan-Nesbitt helmet as I discuss in Section XV(A)(2). Claim 2 adds elements 2[a] to 2[c], which in my opinion are also taught by the Yan-Nesbitt helmet.

a. Element 2[a]

198. In my opinion, the Yan-Nesbitt helmet teaches this element. As I discuss in Section XV(C)(2)(b), Nesbitt teaches a safety helmet with a shell 12 that includes "plurality of sockets 20 ... integrally molded into the shell 12" (Ex-1013, 2:65-67) with each socket comprising a nub 32 (Ex-1013, 3:1-7). In my opinion,

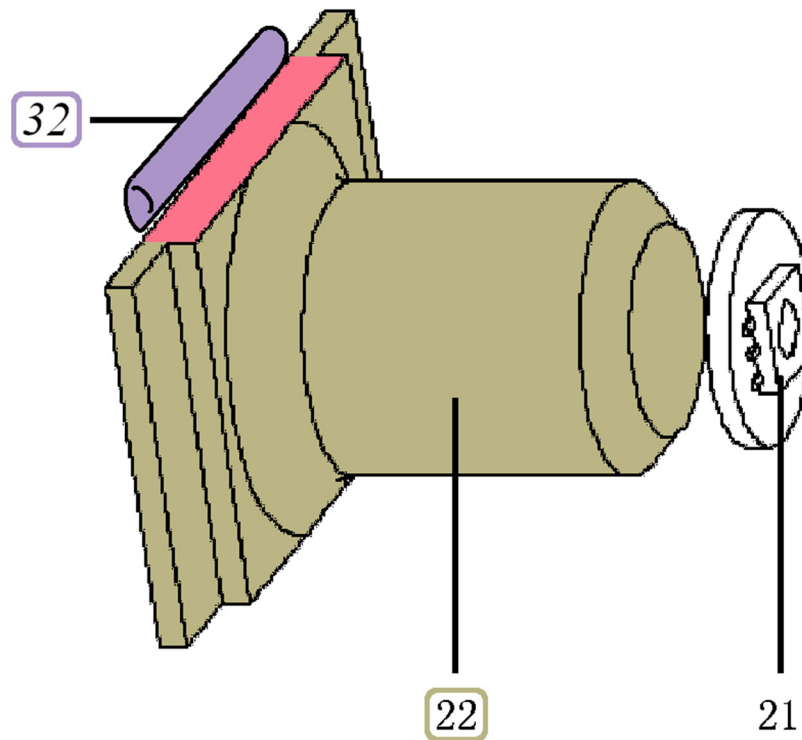
adding Nesbitt's nub 32 to Yan's safety helmet teaches such a receiver slot flanked by raised walls (**L-shaped slots**) with a stop (**nub 32**).



Combined Yan-Nesbitt Helmet

b. Element 2[b]

199. Yan teaches that “the LED lamp 2 comprises an LED light source 21, an LED lamp body 22, and lithium batteries 23.” Ex-1011, ¶21. In my opinion, the lamp body 22 includes a top portion that operates as a clip to engage with the nub 32. An example depiction of the Yan’s lamp 2 accessory engaging with Nesbitt’s nub 32 is shown below. The modified figure represents Yan’s lamp 2 depicted in Yan’s Figure 3 modified to indicate interaction with Nesbitt’s nub 32.



Combined Yan-Nesbitt Lamp and Nub

c. Element 2[c]

200. In my opinion, the L-shaped slots of Yan form a receiver slot that aligns the lamp accessories and retains the lamp accessories therebetween. Therefore, in my opinion, the Yan-Nesbitt helmet teaches that the receiver slot aligns the accessory device (lamp 2 or 3) therein, the raised walls (L-shaped slots) retain the accessory device therebetween, and the stop (nub 32) engages the clip (lamp body 22) to releasably mount the accessory device in the front receptacle (snap-fit slot 11).

4. Claim 3

201. Claim 3 depends from claim 1, and all elements of claim 1 are taught by the Yan-Nesbitt helmet as I discuss in Section XV(C)(2). In my opinion, all elements of claim 3 are also taught by the Yan-Nesbitt helmet.

202. The common material being plastic is obvious for the reasons I discuss above in Section XV(A)(4). Additionally, in my opinion, the Yan-Nesbitt helmet teaches the additional element of claim 3.

203. Nesbitt teaches “a safety helmet 10 having an impact-resistant polyethylene shell 12.” Ex-1013, 2:57-59. Nesbitt further teaches that “the sockets 20 are formed by an indentation 24 integrally formed within the shell 12” (Ex-1013, 3:1-5) and “a nub is formed within the shell, the nub substantially disposed between the extensions” (Ex-1013, 4:54-57). In my opinion, polyethylene is a well-known and commonly produced plastic.

204. Thus, in my opinion, a POSA would have found it obvious to use plastic as taught by Nesbitt to for the helmet body of the Yan-Nesbitt helmet.

5. Claim 4

205. Claim 4 depends from claim 1, and all elements of claim 1 are taught by the Yan-Nesbitt helmet as I discuss in Section XV(C)(2). Claim 4 includes features that are similar to features of claim 2. In my opinion, all elements of claim 4 are taught by the Yan-Nesbitt helmet. As I describe in Section XV(C)(3),

the Yan-Nesbitt helmet teaches that the accessory device (lamp 2 or 3) includes a clip (lamp body 22), the external slot (defined by the L-shaped slots) aligns the accessory device therein, and the protruding nub (nub 32) engages the clip to releasably mount the accessory device in the front receptacle (snap-fit slot 11).

6. Claim 5

206. Claim 5 depends from claim 1, and all elements of claim 1 are taught by the Yan-Nesbitt helmet as I discuss in Section XV(C)(2). In my opinion, all elements of claim 5 are taught by the Yan-Nesbitt helmet.

207. In my opinion, the Yan-Nesbitt helmet teaches this additional element of claim 5. Yan teaches that “using this snap-fit connection method, the mining lamp 3 is not fixed permanently on the helmet body 1, but is instead installed on the helmet body 1 in a detachable manner.” Ex-1011, ¶20. As I discuss in Section XV(C)(2)(g), the Yan-Nesbitt helmet teaches that the external slot (defined by the L-shaped slots) of the front receptacle (snap-fit slot 11) is configured to receive a portion (lamp body 22) of the accessory device (lamp 2 or 3) to mount (detachably install) the accessory device to the front receptacle.

7. Claim 6

208. Claim 6 depends from claim 1, and all elements of claim 1 are taught by the Yan-Nesbitt helmet as I discuss in Section XV(C)(2).

209. In my opinion, the Yan-Nesbitt helmet teaches the additional elements of claim 6. As I describe above, Yan teaches that each snap-fit slot has “two symmetrically arranged L-shaped slots.” Ex-1011, ¶17. Therefore, in my opinion, the Yan-Nesbitt helmet teaches the front receptacle (snap-fit slot 11) includes a first sidewall (one of the L-shaped slots); the accessory device (lamp 2 or 3) includes a bracket (lamp body 22); and the bracket is retained by the first sidewall to mount the accessory device to the front receptacle.

8. Claim 7

210. Claim 7 depends from claim 6, which depends from claim 1, all of the elements of these claims are taught by the Yan-Nesbitt helmet as I discuss in Section XV(C)(2) and Section XV(C)(7).

211. In my opinion, the Yan-Nesbitt helmet teaches the additional elements of claim 7. As I describe in Section XV(C)(7), the Yan-Nesbitt helmet teaches that the front receptacle (snap-fit slot 11) includes a second sidewall (one of the L-shaped slots); and the bracket (lamp body 22) is retained by the first sidewall (the other L-shaped slot) and the second sidewall.

9. Claim 8

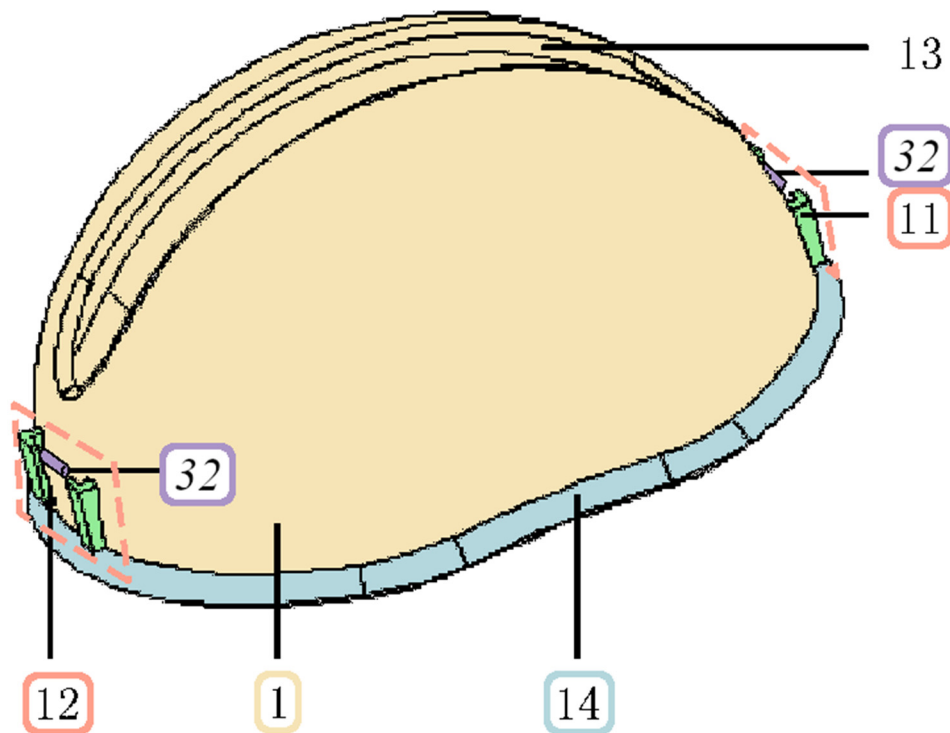
212. In my opinion, all elements of claim 8 are taught by the Yan-Nesbitt helmet.

a. Elements 8[pre] to 8[c]

213. Elements 8[pre] to 8[c] recite a safety helmet having an outer shell, a front receptacle, a rear receptacle, and a first accessory device that have features that were all found in elements 1[pre] to 1[c], so in my opinion most of elements 8[pre] to 8[c] are taught or suggested by the Yan-Nesbitt helmet for reasons I provided in Section XV(C)(2).

214. As compared to element 1[b], element 8[b] adds “the front receptacle being integrally molded with the outer shell.” In my opinion, this is also taught or suggested by the Yan-Nesbitt helmet.

215. As I describe in Section XV(A)(2), Nesbitt teaches a plurality of **sockets 20** that are integrally molded into the shell (Ex-1013, 2:65-67), each socket including a **nub 32** (Ex-1013, 3:1-6).



Combined Yan-Nesbitt Helmet

216. As I discuss in Section XV(C)(1), a POSA would have found it obvious to apply Nesbitt's integral molding teachings to the safety helmet in Yan to form snap-fit slots (receptacles) and nubs thereon. Therefore, in my opinion, the Yan-Nesbitt helmet teaches this aspect.

b. Element 8[d]

217. As I describe in Section XV(C)(2)(g), the Yan-Nesbitt helmet teaches a first accessory device (lamp 2 or 3) having a first mating receptacle (lamp body 22). In my opinion, the Yan-Nesbitt helmet also teaches at least a portion (lamp body 22) of the first accessory device (lamp 2 or 3) being releasably mountable

onto each of the front receptacle (snap-fit slot 11) or the rear receptacle (snap-fit slot 12) on the exterior of the outer shell (helmet body 1).

c. Element 8[e]

218. The second accessory device is mere duplication of parts, as I discuss above in Section XV(A)(9)(c).

219. Additionally, in my opinion, the Yan-Nesbitt helmet teaches this element. As I describe in Section XV(C)(2)(g), Yan teaches that the “mining lamp 3 and the LED lamp 2 are both detachably mounted on the helmet body 1.” Ex-1011, ¶15. Thus, in my opinion, Yan’s mining lamp 3 and LED lamp 2 each teaches the claimed second accessory device.

220. Therefore, in my opinion, each element of claim 8 is taught or suggested by the Yan-Nesbitt helmet.

10. Claims 9 and 12

221. Claims 9 and 12 depend from claim 8, and all elements of claim 8 are taught by the Yan-Nesbitt helmet as I discuss in Section XV(C)(9). Claim 9 recites “the external slot ... includes a receiver slot ... including a **stop**,” and claim 12 recites “the external slot ... includes a receiver slot ... including a **protruding nub**.” Claim 2 recites “the external slot ... is a receiver slot flanked by raised walls and **the protruding nub comprises a stop**.” Accordingly, in my opinion,

the Yan-Nesbitt helmet teaches all elements of claims 9 and 12 for the reasons I discuss above for claim 2 in Section XV(C)(3).

11. Claim 10

222. Claim 10 depends from claim 8, and all elements of claim 8 are taught by the Yan-Nesbitt helmet as I discuss in Section XV(C)(9). Claim 10 states that the common material is “a molded plastic material” rather than just “plastic” as claim 3 recites. As with plastic, in my opinion, a molded plastic material is a known material selected based on its suitability for its intended use. Thus, in my opinion, the Yan-Nesbitt helmet teaches all elements of claim 10 for the reasons I discuss for claim 3 in Section XV(C)(4).

12. Claim 11

223. Claim 11 depends from claim 8, and all elements of claim 8 are taught by the Yan-Nesbitt helmet as I discuss in Section XV(C)(9). Claim 11 has features that are the same as features of element 1[c] and taught by the Yan-Nesbitt helmet for reasons I discuss earlier in Section XV(C)(2)(f).

13. Claims 13-15

224. Claims 13 and 14 depend from claim 8, and claim 15 depends from claim 14. All elements of claim 8 are taught by the Yan-Nesbitt helmet as I discuss in Section XV(C)(9). In my opinion, all features of claims 13-15 are found in claims 5-7, respectively. Thus, in my opinion, the Yan-Nesbitt helmet teaches

or suggests the features of claims 13-15 for the reasons I discuss in Sections XV(C)(6) through XV(C)(8) with respect to claims 5-7, respectively.

14. Claim 16

225. In my opinion, all elements of claim 16 are taught by the Yan-Nesbitt helmet.

a. Elements 16[pre], 16[a], 16[c], and 16[d]

226. Elements 16[pre], 16[a], 16[c], and 16[d] recite a safety helmet having an outer shell, a front receptacle, a rear receptacle, and a first accessory device that have features that are all found in elements 1[pre], 1[a], 1[c], and 1[d], respectively. Thus, in my opinion, the Yan-Nesbitt helmet teaches or suggests these features for reasons I discuss in Sections XV(C)(2).

b. Element 16[b]

227. In my opinion, the Yan-Nesbitt helmet teaches this element. Element 16[b] is similar to element 1[b], distinguished by reciting that “the outer shell forms the protruding nub from a same material as the outer shell.” As I discuss in Section XV(C)(2)(e), the Yan-Nesbitt helmet teaches a protruding nub by incorporating Nesbitt’s nub 32. It would have been obvious to a POSA to form the protruding nub (nub 32) from a same material (*e.g.*, polyethylene) as the outer shell (helmet body 1). Thus, the Yan-Nesbitt helmet teaches this element.

15. Claim 17

228. In my opinion, all elements of claim 17 are taught by the Yan-Nesbitt helmet.

a. Elements 17[pre] to 17[d]

229. Elements 17[pre] to 17[d] recite a safety helmet having an outer shell, a front receptacle, a rear receptacle, and a first accessory device that that have features found in elements 16[pre] to 16[d] as well as elements 1[pre] to 1[d]. Element 17[c] recites “a rear receptacle having an additional external slot disposed on the rear side on the exterior of the outer shell, the rear receptacle having an additional protruding nub disposed centrally relative to the additional external slot, the additional protruding nub being integrally molded with the outer shell on the exterior from the common material” whereas element 1[c] recites “wherein the front receptacle and the rear receptacle are of identical construction,” as I discuss above in Section XV(C)(2)(f). Thus, element 17[c] recites components of the rear receptacle that are the same as the components of the front receptacle, while element 1[c] recites that the receptacles are of identical construction. Accordingly, in my opinion, the Yan-Nesbitt helmet teaches these features for reasons I discuss in Sections XV(C)(14) and XV(C)(2).

b. Element 17[e]

230. Element 17[e] recites a second accessory device that is substantially identical to element 8[e]. Element 17[e] is a mere duplication of parts for the same reasons I discuss for element 8[e] in Section XV(C)(9)(c). Moreover, the Yan-Nesbitt helmet teaches or suggests these features for reasons I discuss in Section XV(C)(9)(c).

c. Element 17[f]

231. In my opinion, Yan teaches or suggests this element for the reasons I discuss above in Section XV(B)(15)(c).

232. Additionally, in my opinion, a POSA would have found it obvious to make the brim, front receptacle, and rear receptacle unitary features of the outer shell using the molding teachings of Nesbitt, as I explain in Section XV(C)(2)(b).

233. Thus, in my opinion, the Yan-Nesbitt helmet teaches or suggests a safety helmet having a brim, front receptacle, and rear receptacle that are a unitary feature of the outer shell.

D. Claims 1 to 17 in View of the Klein News Release

1. Priority Date of Challenged Claims

234. As I mentioned in Section IV, the priority date of the Challenged Claims is at issue because of new matter that was added during prosecution, which I describe in Section VI(B).

235. In particular, each of the independent claims was amended on April 25, 2022 to incorporate new claim elements that lacked any support in Priority Applications as filed.

236. Independent claims 1 and 4 of the '935 Application correspond to claims 1 and 8 in the '327 Patent. These claims were amended to recite that “the **protruding nub is integrally molded** with the outer shell from the common material.” Ex-1004, 62-63. Independent claim 25 of the '935 Application corresponds to claim 16 in the '327 Patent. This claim was similarly amended to recite that “the outer shell **forms the protruding nub from a same material** as the outer shell.” Ex-1004, 64. Independent claim 26 of the '935 Application corresponds to claim 17 in the '327 Patent. This claim was amended to recite “**the protruding nub being integrally molded** with the outer shell on the exterior from a common material.” Ex-1004, 65. In my opinion, there was no support in the Priority Applications as-filed for these amendments.

237. On April 25, 2022, Patent Owner submitted a declaration by Mr. James Hill, its longtime employee, to support its position regarding the added materials. Ex-1004, 48-49, 73-74. In my opinion, the declaration by Mr. Hill is factually flawed.

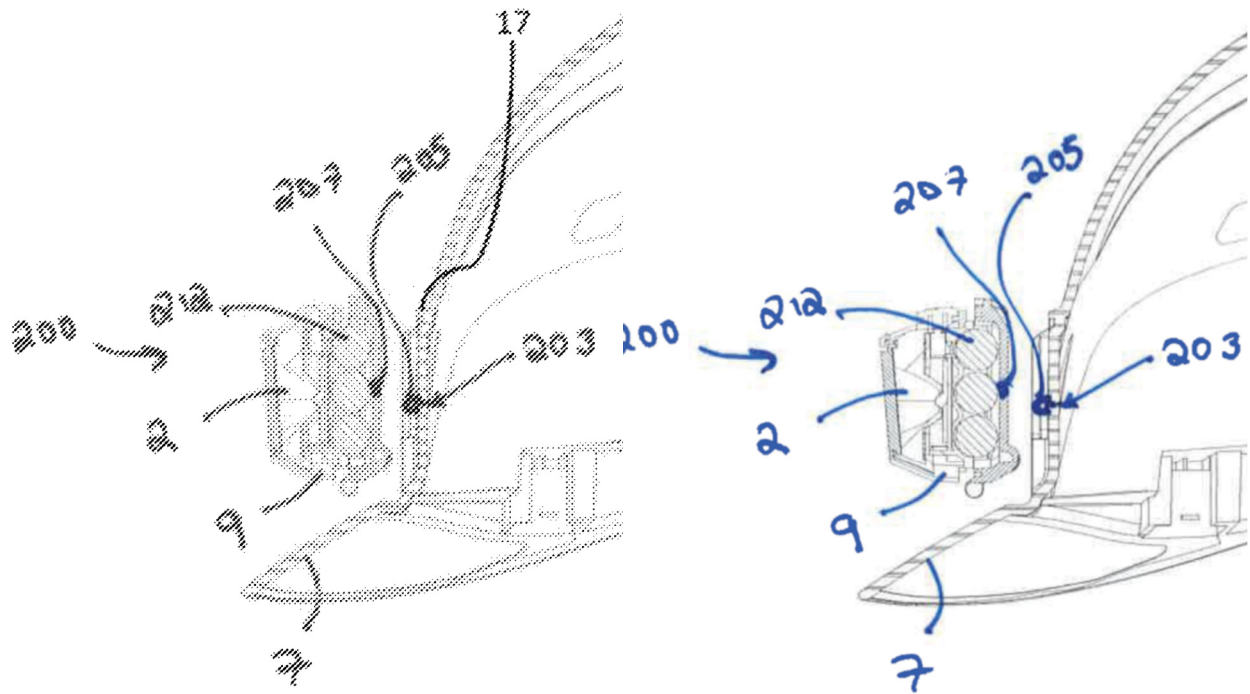
238. Mr. Hill opined that support for added subject matter contested by the Examiner could be found in the drawings of the '935 Application. Mr. Hill states

that “In my opinion, the front/rear tapered receiver (11), and the protruding nub (17), are each a feature that is formed by, unitary with, and/or integral with the outer shell (1) as shown by the fillets and draft angles shown in the outline and sectioned views of the drawings, for example, in Fig. 3 and in Fig. 8.” Ex-1004, 43-44.

239. In my opinion, Mr. Hill’s reliance on Fig. 8 of the ’935 Application is misplaced. Fig. 8 was added to the ’935 Application on October 21, 2021, and is similar to Fig. 5 of the ’491 Provisional with one notable difference, the lead line and reference numeral 17 were added in 2021. Ex-1004, 45, 159; Ex-1006, 11.

240. Therefore, it is my opinion that Mr. Hill erroneously relied on materials that were added in 2021 in order to support his opinion. It is my understanding that, for a priority date of January 26, 2019, Mr. Hill should have relied only on the contents of the Priority Applications as-filed, which is what would have been available to a POSA at the time the ’935 Application was filed. For the January 26, 2018 priority date, it my understanding that Mr. Hill should have relied on only the contents of the ’472 Provisional, which is what would have been available to a POSA at the time the ’472 Provisional was filed.

241. The version of Fig. 8 used by Mr. Hill is reproduced below along with Fig. 5 of the ’491 Provisional. As seen below, Fig. 5 from the ’491 Provisional did not include the lead line or reference numeral 17.



'935 Application, Fig. 8 (Excerpt)

'491 Provisional, Fig. 5 (Excerpt)

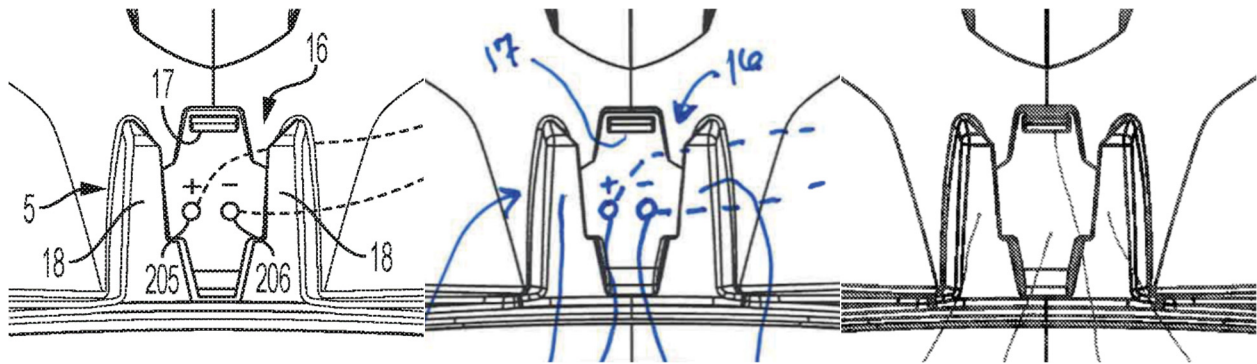
242. In my opinion, the characteristics of the feature indicated by the new numeral 17 are unclear. However, in my opinion, it is apparent that the feature would not engage with a clip of, or otherwise interact with, the headlamp device 200 while the headlamp device is mounted. Therefore, in my opinion, this feature is not illustrating the claimed protruding nub.

243. Additionally, it is unclear whether the uniform cross-hatching for the helmet shell extends to the newly indicated feature, and therefore, in my opinion, a POSA would not understand that the feature is integrally molded of a common material based on the figure.

244. The protruding nub 17 is only shown and labeled in Fig. 3 of the '935 Application as-filed. Ex-1007, 16.

245. Fig. 3 of the '935 Application corresponds to Fig. 3 of the '491 Provisional (Ex-1006, 10) and to Fig. 5 of the '472 Provisional (Ex-1007, 14).

Each of these figures is reproduced in relevant part below:



'935 App., Fig. 3 (Exc.) '491 Prov., Fig. 3 (Exc.) '472 Prov., Fig. 5 (Exc.)

246. The rectangular feature indicated by numeral 17 does not include the fillets referenced by Mr. Hill. Moreover, in my opinion, the line drawing is insufficient for a POSA to have understood that the rectangular feature protrudes from the outer shell of the helmet, as opposed to being a detent.

247. In my opinion, the line drawing of the protruding nub 17 is insufficient for a POSA to have understood that the protruding nub 17 is integrally molded with, or formed from, the outer shell or that it is of a same material as the outer shell.

248. In my opinion, the written portion of the Priority Applications as-filed is also insufficient for a POSA to have understand that the protruding nub 17 is integrally molded with, or formed from, the outer shell or that it is of a same material as the outer shell.

249. Mr. Hill also stated that his conclusion that “the front and rear receivers (11) shown in the drawings are molded from the same material and in the same mold during the same molding operation as the outer shell of the helmet” is “based on an observation of the photos illustrated in Figures 12 and 13 of the ’935 Application,” stating that his opinion is partially based on the material color. Ex-1004, 45-46.

250. In my opinion, Figures 12 and 13 of the ’935 Application do not show the protruding nub as well as failing to show other portions of the receivers. Additionally, Figures 12 and 13 are black and white photographs that do not show the material color. This can be seen in Ex-1005, pages 15-16, which show the photographs that were added into the ’935 Application.

251. For these reasons, it is my opinion that Mr. Hill’s declaration is flawed and that the Priority Applications as-filed are not sufficient to allow a POSA to make the protruding nub 17 integrally molded with, or formed from, the outer shell or with a same (*i.e.*, common) material as the outer shell.

252. It is my understanding that, due to the Priority Applications as-filed being insufficient to allow a POSA to have understood that the inventors were in possession of the claimed protruding nub as of the dates that any of the Priority Applications were filed, the priority date for the '327 Patent is the date on which the new matter was added as I describe in Section XIII. Therefore, I understand that due to the inclusion of new matter on October 21, 2021, the priority date for the Challenged Claims may be no earlier than October 21, 2021.

2. Claim 1

253. In my opinion, the Klein News Release discloses all elements of claim 1.

a. Element 1[pre]

254. In my opinion, the Klein News Release discloses this element. The Klein News Release shows and describes ten different models of hard hat, Ex-1010, 1, with “hard hat” being interchangeable with the safety helmets of the '327 Patent. For example, Ex-1001, column 1 lines 14-17, recite that “The present disclosure relates to ... safety helmets ...[,] also referred to as hard hats.”. Additionally, as I note in Section V, “hard hat” is a term commonly used to refer to safety helmets. Therefore, in my opinion, the Klein News Release’s hard hats disclose a safety helmet.



Ex-1010, Image 1

255. I pause here to note that the original Klein News Release images are color images. In some of the following images I have annotated the color images with reference lines and colored textboxes.

b. Elements 1[a][i] to 1[a][iii]

256. The Klein News Release discloses molded hard hats with various brims, including “Cap Style” and “Full Brim” hats, and indicates the hard hats are designed for electricians, line workers, and other professionals. Ex-1010, 2. It also indicates that the hard hats include shells, which can be white or orange in color. Ex-1010, 2. Additionally, the Klein News Release discloses that each hat has been “[t]ested for reverse donning to safely wear frontwards or backwards.” Ex-1010, 1.

257. In my opinion, based on the disclosures of the Klein News Release, a POSA would appreciate that each of the hard hat shells are molded from a common (*e.g.*, plastic) material. In my opinion, a POSA would further appreciate that the outer shells have exterior surfaces with front and back ends, with a brim extending at least from the front side of said surfaces. Additionally, in my opinion, a POSA would appreciate that the illustrated brims are configured for shielding a wearer's eyes from sunlight and falling debris and further configured to be above the wearer's face at least during standard wear—with the front side of the shell above the wearer's face).



Ex-1010, Image 3 (Excerpt)

258. Accordingly, it is my opinion that the Klein News Release discloses an outer shell (*e.g.*, a white shell) adapted to be worn by a user (*e.g.*, an

electrician), the outer shell being molded from a common material (*e.g.*, plastic) and having an exterior surface defining a front side, a rear side, and a brim extending forward from the front side and configured to shield the user's eyes from sunlight or falling debris (*e.g.*, as illustrated in image 3), wherein the outer shell is reversible such that one of the front side or the rear side is oriented above a face of the user when the outer shell is worn by the user (*e.g.*, as illustrated in image 3), and wherein the brim is configured to be disposed above the face of the user when the outer shell is worn by the user with the front side being oriented above the face of the user (*e.g.*, as illustrated in image 3).

c. Element 1[b]

259. According to the Klein News Release, these mounts implement patent-pending technology for holding headlamps without straps or zip-ties, as I discuss above in Section VII(E). Ex-1010, 1.



Ex-1010, Image 1 (Excerpt)

260. Accordingly, it is my opinion that it would be apparent to a POSA reviewing the Klein News Release’s images and description, the Klein News Release discloses the claimed front receptacle.

d. Element 1[c]



Ex-1010, Image 2 (Excerpt)

261. As would be apparent to a POSA reviewing the Klein News Release, such as the images reproduced in this declaration, in my opinion, the Klein News Release discloses a read receptacle having an additional external slot disposed on the rear side on the exterior surface of the outer shell, wherein the front receptacle and the rear receptacle are of identical construction.

e. Element 1[d]

262. In my opinion, the Klein News Release discloses such accessory devices. Ex-1010, Image 1. The Klein News Release further discloses that “[p]atent-pending accessory mounts on front and back securely hold [headlamps] without using straps or zip ties.” Ex-1010, 1.



Ex-1010, Image 1

263. Thus, in my opinion, as would be apparent to a POSA reviewing the Klein News Release (*e.g.*, the images and description), the Klein News Release

discloses the claimed accessory device (*e.g.*, the Hardhat Headlamp (Cat. No. KHH56220)).

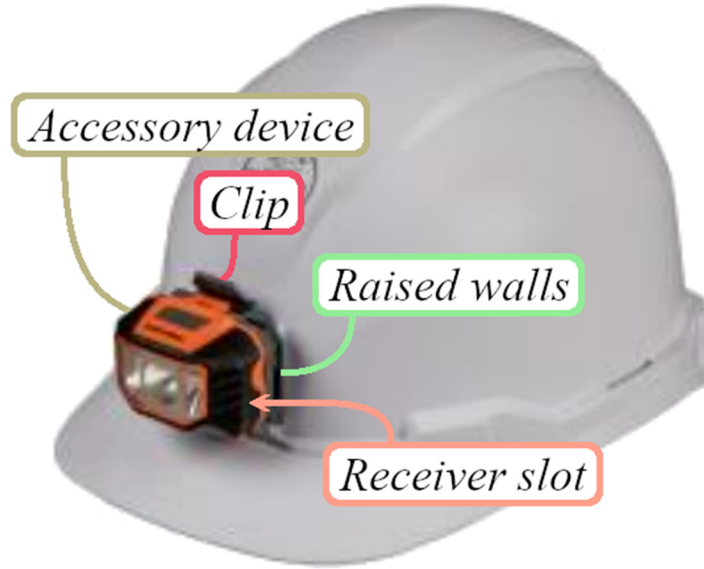
3. Claim 2

264. Claim 2 depends from claim 1, which is anticipated by the Klein News Release as I discuss in Section XV(D)(2). In my opinion, the Klein News Release discloses hard hats with the receptacles recited in claim 2. Ex-1010, Image 1.



Ex-1010, Image 1 (Excerpt)

265. In my opinion it would have been apparent to a POSA that the Klein News Release discloses that the claimed external slot of the front receptacle is a **receiver slot** flanked by **raised walls**.



Ex-1010, Image 3 (Excerpt)

266. In my opinion it would have been apparent to a POSA that the Klein News Release discloses the claimed accessory device that includes a clip.

4. Claim 3

267. Claim 3 depends from claim 1, which is anticipated by the Klein News Release as I discuss in Section XV(D)(2). The selection of plastic for the common material is obvious as I discuss in Section XV(A)(4). Moreover, in my opinion, a POSA would understand from the images that the material is plastic. Accordingly, in my opinion, the Klein News Release discloses the common material being plastic.

5. Claim 4

268. Claim 4 depends from claim 1, which is anticipated by the Klein News Release as I discuss in Section XV(D)(2). Claim 4 includes similar elements as claim 2. In my opinion, the Klein News Release discloses these elements and anticipates claim 4 for the reasons I discuss for claim 2 above in Section XV(D)(3).

6. Claim 5

269. Claim 5 depends from claim 1, which is anticipated by the Klein News Release as I discuss in Section XV(D)(2). As would be apparent to a POSA reviewing the Klein News Release, the Klein News Release discloses headlamp accessories being received by the front receptacle of the hard hats as I discuss above with respect to claim 2 in Section XV(D)(3). Accordingly, in my opinion, the Klein News Release discloses the elements of claim 5.

7. Claim 6

270. Claim 6 depends from claim 1, which is anticipated by the Klein News Release as I discuss in Section XV(D)(2). As would be apparent to a POSA reviewing the Klein News Release, such as the Klein News Release's images, the Klein News Release discloses that the front receptacle includes a first sidewall, the accessory device includes a bracket, and the bracket is retained by the first sidewall to mount the accessory device to the front receptacle. Accordingly, in my opinion, the Klein News Release discloses the elements of claim 6.

8. Claim 7

271. Claim 7 depends from claim 6, which is anticipated by the Klein News Release as I discuss in Section XV(D)(7). In my opinion, it would have been apparent to a POSA reviewing the Klein News Release that the Klein News Release discloses that the front receptacle includes a second sidewall, and the bracket is retained by the first and second sidewalls. Therefore, in my opinion, the Klein News Release discloses the elements of claim 7.

9. Claim 8

272. In my opinion, the Klein News Release discloses all elements of claim 8.

a. Elements 8[pre] to 8[c]

273. Elements 8[pre] to 8[c] recite a safety helmet having features found in elements 1[pre] to 1[c], so most of elements 8[pre] to 8[c] are disclosed by the Klein News Release for reasons I provided earlier in Section XV(D)(2)(a)-XV(D)(2)(d).

274. As compared to element 1[b], element 8[b] adds “the front receptacle being integrally molded with the outer shell.” This would be apparent to a POSA reviewing the Klein News Release (*e.g.*, the images of the Klein News Release).

b. Elements 8[d] and 8[e]

275. The Klein News Release discloses that “[p]atent-pending accessory mounts on front and back securely hold Hardhat Headlamp (Cat. No. KHH56220) or Rechargeable Auto-Off Headlamp (Cat. No. 56034) without using straps or zip ties.” Ex-1010, 1. The second accessory device is mere duplication of parts, as I discuss above in Section XV(A)(9)(c). Moreover, in my opinion, it would be apparent to a POSA reading this description and reviewing the Klein News Release’s images that the Klein News Release discloses a first accessory device (*e.g.*, Hardhat Headlamp (Cat. No. KHH56220)) having a first mating receptacle formed thereon, at least a portion of the first accessory device being releasably mountable onto each of the front receptacle or the rear receptacle on the exterior of the outer shell.

276. Additionally, as would be apparent to a POSA reviewing the Klein News Release, it discloses a second accessory device (*e.g.*, Rechargeable Auto-Off Headlamp (Cat. No. 56034)) having a second mating receptacle formed thereon, at least a portion of the second accessory device being releasably mountable onto each of the front receptacle or the rear receptacle on the exterior of the outer shell.

277. Accordingly, in my opinion, the Klein News Release anticipates all elements of claim 8.

10. Claims 9 and 12

278. Claims 9 and 12 depend from claim 8, which the Klein News Release anticipates for reasons I discuss in Section XV(D)(9). The features of claims 9 and 12 are found within claim 2, as I note in Section XV(A)(10). Accordingly, the Klein News Release anticipates claims 9 and 12 for the reasons I discuss for claim 2 in Section XV(D)(3).

11. Claim 10

279. Claims 9 and 12 depend from claim 8, which the Klein News Release anticipates for reasons I discuss in Section XV(D)(9). Claim 10 states that the common material is “a molded plastic material” rather than just “plastic” as claim 3 recites. As with plastic, a molded plastic material is a known material selected based on its suitability for its intended use. Thus, the Klein News Release anticipates claim 10 for the reasons I discuss above for claim 3 in Section XV(D)(4).

12. Claim 11

280. Claim 11 depends from claim 8, which the Klein News Release anticipates for the reasons I discuss in Section XV(D)(9). The features of claim 11 are found in element 1[c] and disclosed by the Klein News Release for reasons I discuss in Section XV(D)(2)(d).

13. Claims 13-15

281. Claims 13 and 14 depend from claim 8, which the Klein News Release anticipates for reasons I discuss in Section XV(D)(9). Claim 15 depends from claim 14. Claims 13-15 have features that are all found in claims 5-7 respectively. Thus, the Klein News Release anticipates claims 13-15 for the reasons I discuss above for claims 5-7 in Sections XV(D)(6) to XV(D)(8).

14. Claim 16

282. In my opinion, the Klein News Release discloses all elements of claim 16.

a. Elements 16[pre], 16[a] 16[c], and 16[d]

283. Elements 16[pre], 16[a] 16[c], and 16[d] recite a safety helmet having an outer shell, a front receptacle, a rear receptacle, and a first accessory device that have features that are all found in elements 1[pre], 1[a], 1[c], and 1[d], respectively. The Klein News Release discloses these features for reasons I discuss in Sections XV(D)(2)(a)-XV(D)(2)(c) and XV(D)(2)(e).

b. Element 16[b]

284. Element 16[b] is similar to element 1[b], distinguished by reciting that “the outer shell forms the protruding nub from a same material as the outer shell.” In my opinion, it would have been apparent to a POSA reviewing the Klein News Release’s images to form a protruding nub from a same material as the outer shell.

15. Claim 17

285. In my opinion, the Klein News Release discloses all elements of claim 17.

a. Elements 17[pre] to 17[d]

286. Elements 17[pre] to 17[d] recite a safety helmet having an outer shell, a front receptacle, a rear receptacle, and a first accessory device that that have features found in elements 16[pre] to 16[d] as well as elements 1[pre] to 1[d]. Element 17[c] recites “a rear receptacle having an additional external slot disposed on the rear side on the exterior of the outer shell, the rear receptacle having an additional protruding nub disposed centrally relative to the additional external slot, the additional protruding nub being integrally molded with the outer shell on the exterior from the common material” whereas element 1[c] recites “wherein the front receptacle and the rear receptacle are of identical construction,” as I discuss above in Section XV(A)(15)(a). Therefore, element 17[c] recites components of the rear receptacle that are the same as the components of the front receptacle, while element 1[c] recites that the receptacles are of identical construction. Accordingly, the Klein News Release discloses these features for the reasons I discuss in Sections XV(D)(14) and XV(D)(2).

b. Element 17[e]

287. Element 17[e] recites a second accessory device that is substantially identical to element 8[e]. Element 17[e] is a mere duplication of parts for the same reasons I discuss for element 8[e] in Section XV(D)(9)(b). Moreover, the Klein News Release discloses these features for the reasons I discuss in Section XV(D)(9)(b).

c. Element 17[f]

288. Additionally, I believe it would be apparent to a POSA reading this description and reviewing the Klein News Release's images that the Klein News Release discloses hard hats with a brim, a front receptacle, and a rear receptacle that are unitary features of the outer shell.

XVI. CONCLUDING STATEMENTS

289. In my opinion, claims 1 to 17 are obvious in view of Yan and Daley.

290. In my opinion, claims 2, 4, 9, and 12 are obvious in view of Yan, Daley, and Kiessler.

291. In my opinion, claims 1 to 17 are obvious in view of Yan and Nesbitt.

292. In my opinion, claims 1 to 17 are anticipated by the Klein News Release.

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

Date: April 18, 2025

A handwritten signature in blue ink, appearing to read "Per Reinhall", is positioned above a horizontal line.

Per Reinhall, Ph.D.