

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of: Jody Akana et al.

U.S. Patent No.: D735,131

Attorney Docket No.: 50095-0153IP1

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Title: CHARGER

DECLARATION OF LANCE GORDON RAKE

I currently hold the opinions set expressed in this declaration. But my analysis may continue, and I may acquire additional information and/or attain supplemental insights that may result in added observations.

I hereby declare that all statements made of my own knowledge are true and that all statements made on information and belief are believed to be true. I further declare 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 the Title 18 of the United States Code.

Dated: 24 August 2023

By: 
Lance Gordon Rake

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I, LANCE GORDON RAKE, hereby declare the following:

I. QUALIFICATIONS AND BACKGROUND INFORMATION

1. My education and experience are described more fully in the attached curriculum vitae (Appendix A). For ease of reference, I have highlighted certain information below.
2. I am a Professor of Design in the School of Architecture & Design at the University of Kansas. I am an industrial designer and a design researcher and educator. I have a Bachelor's Degree in Industrial Design from the University of Kansas, received in 1974, and a Master's Degree in Product Design from North Carolina State University, received in 1982.
3. I have worked as an industrial designer continuously for 49 years since receiving my undergraduate degree in 1974. In 1980, I began my career as a full-time faculty member at various universities. From 1980 to 1984, I was an Assistant Professor of Industrial Design at Auburn University. From 1985 to 1986, I taught Product Design at UNITEC Institute of Technology in Auckland, New Zealand.
4. I then returned to the United States and began teaching at the University of Kansas in 1987 as an assistant professor. I am presently a full professor with the

University of Kansas, and my formal title is Professor of Design, School of Architecture & Design. Also while at the University of Kansas, I was the Founding and Acting Director of the Center for Design Research from 1991 to 2005.

5. For 16 years, from 2000 to 2016, I served as a design consultant to Infusion Design. My creative activity there centered on collaborative design work in the transportation and consumer products industries.

6. Additionally, I have designed home electronic products including audiophile and consumer audio products. This includes amplifiers, earbuds and headsets. I have also design battery chargers for home and garage applications.

7. As a design practitioner and educator, I have conducted and/or directed research into the study of markets from a product design perspective, as well as researching human factors and product usability. I have given presentations on design at several institutions around the world on topics including ergonomics, design education, design practice, and contemporary issues in the practice of industrial design.

8. My work has been featured in numerous articles and texts, including the text “Think Wrong,” relating to design innovation and processes. “Think Wrong” features a story about my design process, focusing on my philosophy of working

with and manipulating physical materials in the design process to develop prototypes early in the design process.

9. I have developed and designed numerous consumer products from nonconventional materials, such as bamboo and bamboo composites, including bicycles, skateboards, and paddleboards, in collaboration with HERO, a not-for-profit organization located in Greensboro, Alabama. Designs in this field challenge designers to develop workable designs within the limitations imposed by non-conventional materials and structural requirements of the product. In my role as a professor, I have taught an Industrial Design Studio course nearly every semester since approximately 1980, where I advise and direct undergraduate students as they design and develop a variety of different products.

10. Over the years, I have served as an expert witness since approximately the year 2000 and have been retained as an expert witness in approximately 30 cases. As an expert witness, I have provided opinions relating to numerous consumer products. Many of the cases for which I have been retained have involved issues relating to alleged design patent infringement, alleged utility patent infringement, and/or alleged invalidity.

11. I am an inventor on 12 patents, including U.S. Patent No. 7,900,781 for “Storage System,” U.S. Patent No. 5,490,676 for “Playing Cards with Gripping

Surface,” U.S. Patent No. D600,928 for “Step Stool,” and U.S. Patent No. 6,820,286 for “Protective Mask.”

12. In the fall of 2012, I was awarded a sabbatical to teach and conduct design research at the Industrial Design Centre at the Indian Institute of Technology – Bombay in Mumbai, India. I have been a facilitator and advisor to the Swedish Industrial Design Foundation’s Sommar-designkontoret. In 2009, I was one of only two American designers invited to participate in ICSID (International Congress of Societies of Industrial Design) Interdesign Citymove, Gellivare, Sweden. I am currently a Visiting Professor in the Mechanical Engineering Department at Högskolan i Halmstad (Halmstad University) in Halmstad, Sweden.

13. In 2004, I was included in ID Magazine’s “Design 50.” The editors at ID chose to profile the work of 50 US designers in their January/February 2004 Issue—one from each state. I was honored as the designer chosen to represent Kansas. ID is the largest and most prestigious journal in the United States for the design profession.

14. I am a 2015–2016 Fulbright Senior Scholar. I am also a 2019–2020 Global Fulbright Scholar.

II. APPLICABLE LEGAL PRINCIPLES

15. I am not a lawyer and do not provide legal opinions in this declaration. I have conducted my analysis, however, within the context of the applicable law. Counsel has informed me of applicable law, and my understanding of that law is summarized below.

16. A utility patent may cover things like how a formulation or mechanical invention works. A design patent covers the way that something looks—its ornamental appearance.

17. I understand that design patents have just one claim, and the claim refers to the design shown in the figures. In particular, the claimed design is shown in solid lines, and broken or dotted lines in a design patent are not part of the claimed design. As the '131 patent indicates, “[t]he broken lines in the figures show portions of the charger and environment that form no part of the claimed design.” EX1001, 1. In design patents, shade lines can be used to demonstrate the contour of a surface that is part of the claimed design.

18. I have been informed by counsel that in addressing a claim of obviousness in a design patent case, the question is whether the claimed design would have been obvious to a designer of ordinary skill who designs the things at issue. I understand that this analysis generally has two steps. First, the challenger must find a single

reference that has design characteristics that are basically the same as the claimed design (e.g., a “*Rosen*” reference). And second, once this first reference is found, other references may be used to modify the first reference to create a design that has the same overall visual appearance as the claimed design. I understand that the secondary reference may only be used to modify the first reference if they are so related that the appearance of certain features on one would suggest the application of those features to the other. When assessing obviousness according to this framework, the focus must be on the actual appearances of the design, rather than on generic design concepts or uses/functions of the design.

III. DESIGNER OF ORDINARY SKILL

19. Obviousness of a design patent is assessed from the perspective of a designer of ordinary skill. I understand that Masimo has proposed the following definition of a designer of ordinary skill:

[A] designer of ordinary skill...would have had an undergraduate or graduate degree in industrial/product design, along with at least two years of relevant work experience in the field of industrial/product design of portable electronic devices.

Pet. at 30 (citing Ex. 1003 (Delman Dec.) ¶¶ 26-27). I understand that in co-pending litigation Apple has proposed that a designer of ordinary skill (“DOSA”):

would have a degree in Industrial Design or Mechanical Engineering, and at least two years of professional experience creating Industrial Designs of consumer products.

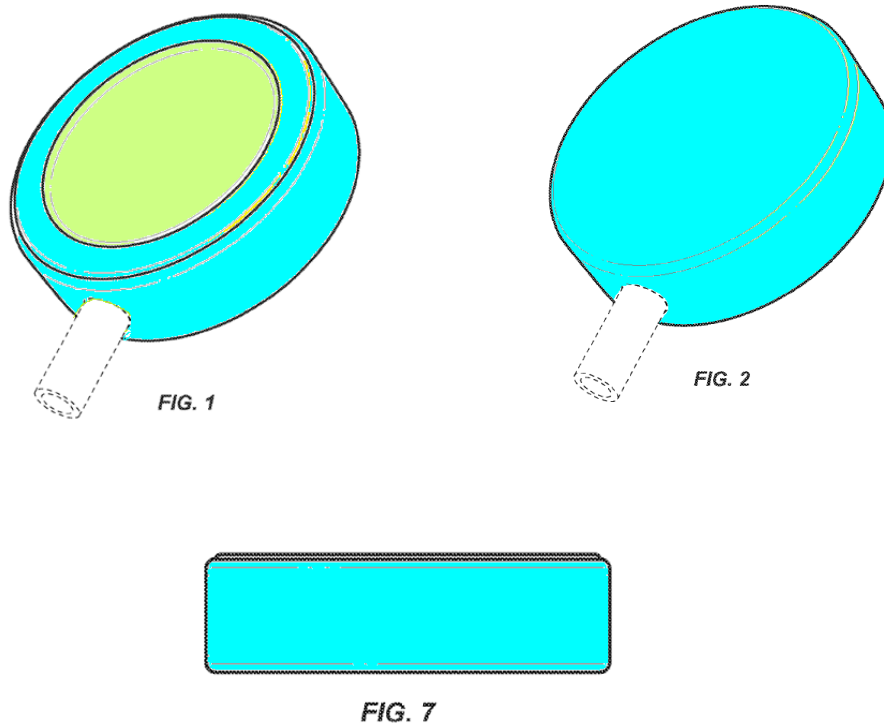
My opinion is the same regardless of which definition is applied. Further, I meet and exceed both definitions.

IV. THE '131 PATENT

20. The '131 patent is a design patent for a “charger.” EX1001, 1. The '131 Patent claims a sleek design for a “charger” that has an overall appearance of a compact puck design having a top face with a circular concave recess that evokes an elegant nest or cradle appearance and a bottom face having a flat plane. EX1001, Figs. 1-11.

21. As illustrated below, the claimed design includes an overall cylindrical shape, with a circular shape that is visible in plan and bottom views (blue). A top major face is dominated by a prominent circular concave recess (green) that is inset relative to a ring (blue). The ring on the top major face is flat. The claimed design has a general body profile that creates a compact puck appearance with a distinctive ratio of diameter to height, as shown in its figures. The claimed design also has non-orthogonal transitions (e.g., such as a curved radius or a beveled edge) between each major face and its sidewall (blue). Both the claimed sidewall and bottom major face of the design patent are continuous and lack features such as a protrusion or recess

(i.e., the sidewall and bottom major face are featureless). Each of these aspects are readily observable features that contribute to the overall appearance of the claimed design.



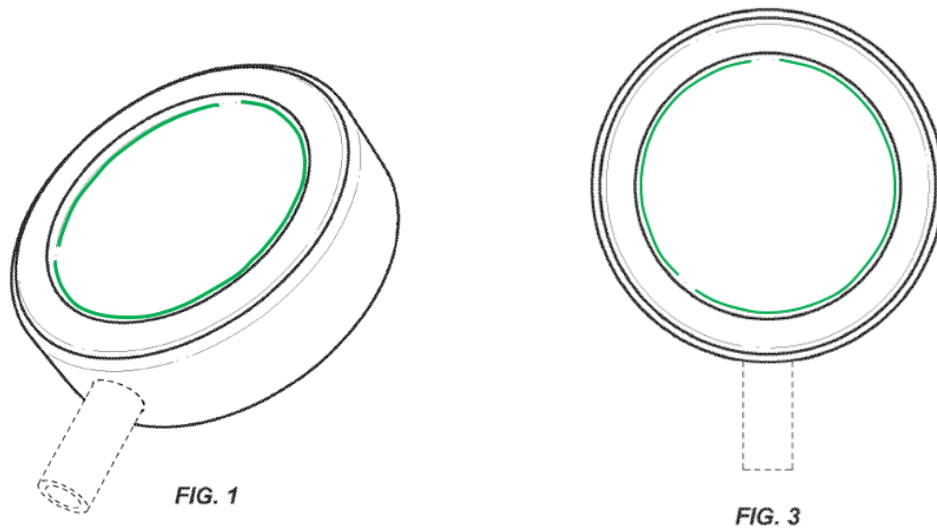
EX1001, Figs. 1, 2, and 7 (annotated)

22. The body of the claimed design resembles a compact puck. Furthermore, the circular concave recess on the top major face and a flat planar surface on the opposing major face evokes a nest or cradle appearance. These features of the '131

design I describe above are readily observable features and contribute to the overall appearance of the claimed design.

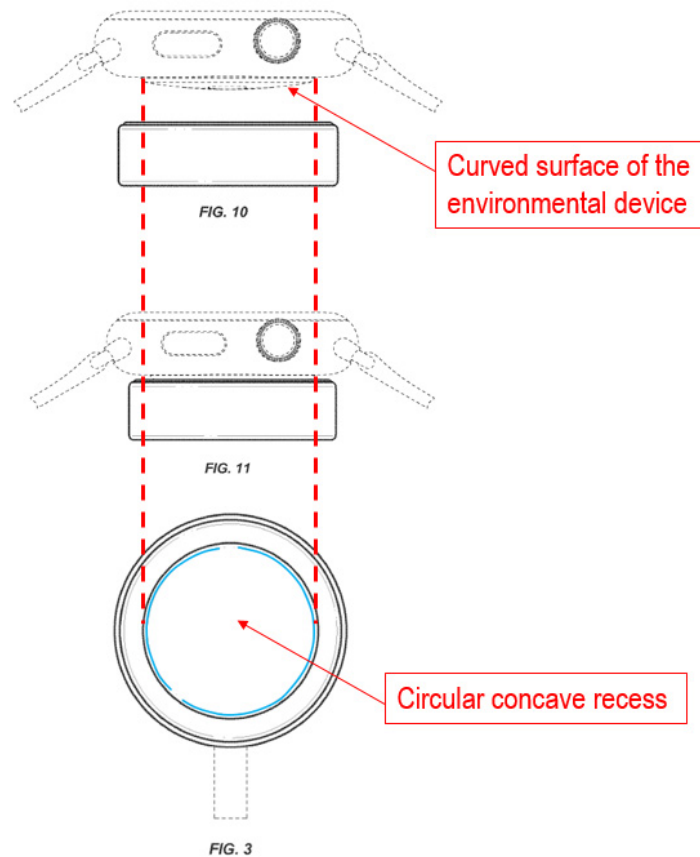
A. Circular Concave Recess

23. Figures 1 and 3 (reproduced below) show the claimed design. The claimed design includes a top major face dominated by a center portion having a circular concave recess that is positioned interior to the surrounding ring. It is my opinion that the patented design covering the circular concave recess of the charger's top major face is ornamental and contributes to the charger's overall visual appearance. The center portion has a circular concave recess that is concentric with the surrounding ring. The circular concave recess is depicted by contour shading lines (depicted in green in FIGS. 1 and 3) present in the center portion. Notably, the claimed design shows that the contour shading lines of the circular concave recess are spaced apart from the ring (best illustrated in FIG. 3). Thus, the concave recessed portion of claimed design is a distinctive feature of the center portion of the top face that is interior to the inner wall of the ring—not a feature of the ring. *Id.*



EX1001, Figs. 1 (left), 3 (right)

24. Additionally, Figures 10 and 11 show the shape of a curved bottom surface of an environmental device. Figure 10 shows the environmental device positioned above the charger, and Figure 11 shows the environmental device positioned on the charger. Based on my knowledge and experience in the field, viewing Figures 10 and 11 together, it is clear that the central portion of the charger's top major face has a circular concave recess that accommodates the contour of the curved surface of the environmental device:



EX1001, Figs. 10, 11, 5 (annotated)

B. Compact Puck Design (e.g., Width-to-Height Ratio)

25. The overall body shape of the claimed design (blue) resembles a compact puck. The compact puck design has a distinctive width (i.e., diameter) and height (i.e., distance between the top and bottom faces). Proportions having substantially the same ratio of width to height, as shown in the figures of the claimed design,

evoke an overall appearance of a compact puck design. The width-to-height ratio is ornamental and contributes ornamentally to the charger's overall visual appearance.

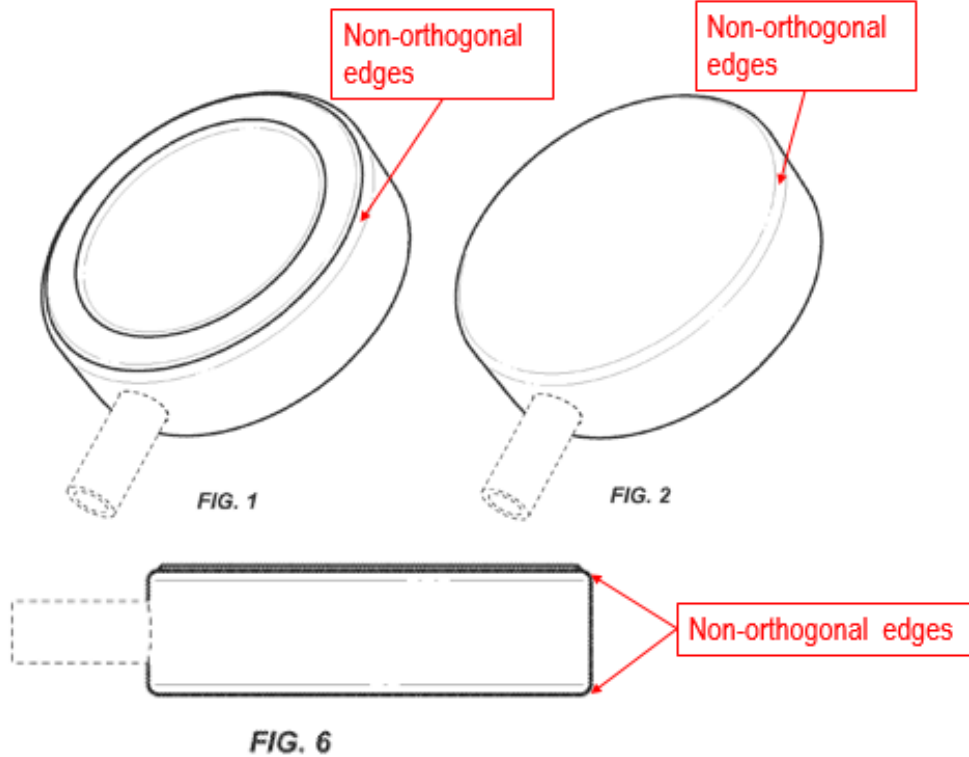


FIG. 7

EX1001, Fig. 7 (annotated)

C. Non-Orthogonal Transitional Edges

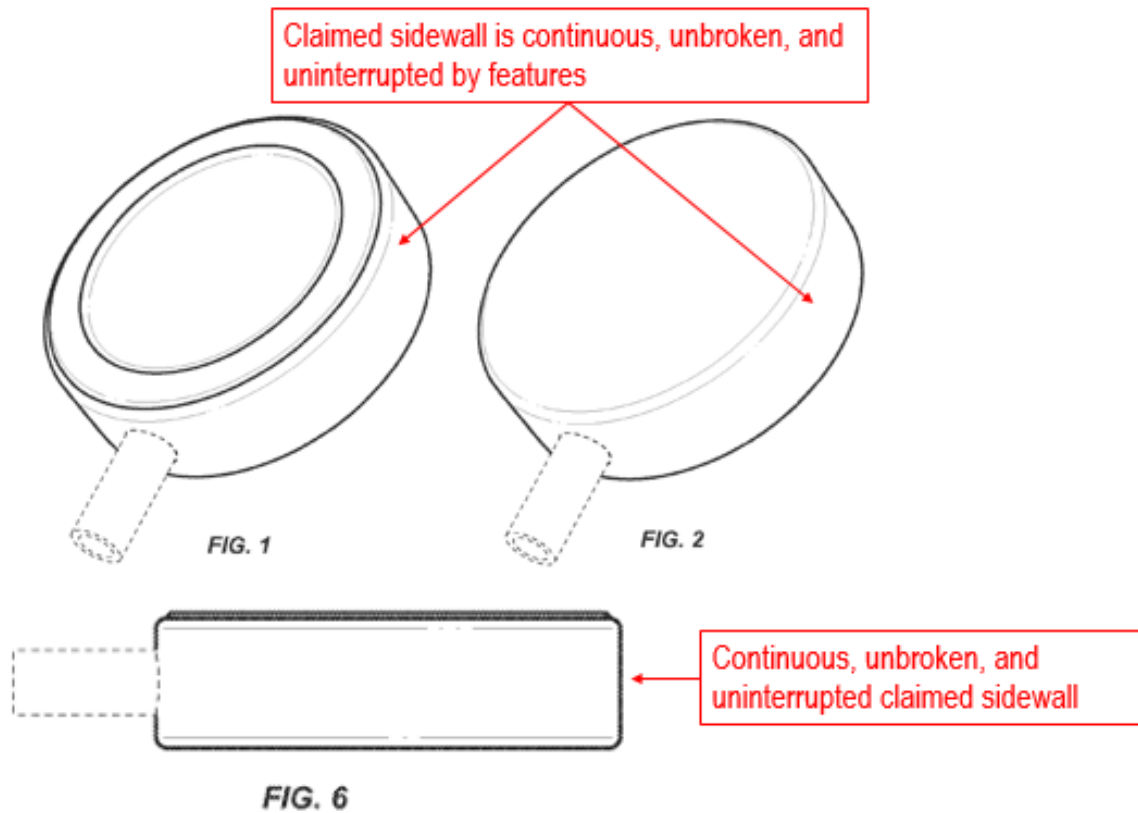
26. An overall cylindrical shape, with a circular shape viewed from above and below, with non-orthogonal transitional edges (e.g., beveled or curved edges) that between the sidewall and the top and bottom faces, is ornamental and contributes ornamentally to the charger's overall compact puck appearance.



EX1001, Figs. 1, 2 and 6 (annotated)

D. Continuous Sidewall and Flat Bottom Face

27. The claimed design has a generally featureless sidewall, *i.e.*, the claimed sidewall of the '131 Patent are shown as continuous, unbroken, and uninterrupted by features that distract from the continuity of the sidewall's design. Furthermore, the claimed design has a generally featureless flat bottom surface, *i.e.*, the bottom is continuous, unbroken, and uninterrupted by features that distract from the continuity of the bottom surface's design.



EX1001, Figs. 1, 2, and 6 (annotated)

28. The Petition largely ignores these immediately observable features in its claim construction. *See* Pet., 12. For example, the Petition describes the '131 Patent's design as "a charger having (1) a cylindrical shape with a flat bottom surface (gray); (2) a short, flat ring [] on the cylinder's top surface that is smaller in diameter than the cylindrical charger; and (3) a recessed center portion [] that is surrounded by the top surface's ring." *Id.* But this construction ignores many of the prominent features of the claimed design, including the 1) circular *concave* recess, the 2) compact body

with proportions with substantially the same width to height (as shown in the claimed design's figures), 3) the non-orthogonal transitions between the major faces and the sidewall, and 4) the continuous, congruent bottom major face and claimed sidewall. Each of these features contribute to the claimed design's unique and overall visual appearance, and are significant to the ordinary designer.

29. The Petition's generic description of design concepts and omission of the appearance provided by the actual claimed shapes and their relationships fails to recognize the overall impression of the claimed design.

**V. THE CLAIMED DESIGN INCLUDES PROMINENT FEATURES
THAT ARE NOT FULLY ACCOUNTED FOR IN THE
PETITION'S PROPOSED CLAIM CONSTRUCTION**

30. Based on my review of the Petition, the Petition overlooks many features of the '131 patent's design that are immediately observable and contribute to its overall appearance. For example, I understand that the Petition describes the '131 patent is directed to "a charger having (1) a cylindrical shape with a flat bottom surface (gray); (2) a short, flat ring [] on the cylinder's top surface that is smaller in diameter than the cylindrical charger; and (3) a recessed center portion [] that is surrounded by the top surface's ring." Pet., 12.

31. Based on my analysis of the '131 patent, the Petition's characterization overlooks the actual appearance of many of the prominent features described above, including the 1) circular *concave* recess, the 2) compact body with proportions with substantially the same width to height (as shown in the claimed design's figures), 3) the non-orthogonal transitions between the major faces and the sidewall, and 4) the continuous, congruent bottom major face and claimed sidewall. As I discussed above, these features contribute to the overall appearance of the '131 patent's design as including an ornamental ring. Based on my knowledge and experience in the field, and my review of the '131 patent, the ordinary designer would have noted these features and found them to be important to the overall visual impression of the design.

A. Alternative Designs Emphasize that the Claimed Design Features are Ornamental

32. As I described above, each of the elements of the claimed design contributes meaningfully to the overall appearance of the design. The overall appearance of the claimed design of the '131 patent is one of a compact puck design, which has two major faces that are different—a top face with a circular concave recess, and a bottom face having a flat plane, and that evokes an elegant nest or cradle appearance.

Additionally, as I noted above, the '131 patent's design also has a readily-apparent width-to-height ratio that forms the compact puck design of the charger device.

33. The existence of multiple alternative designs are indications that the '131 patent design elements contribute ornamentally to the overall appearance of the '131 patent's design.

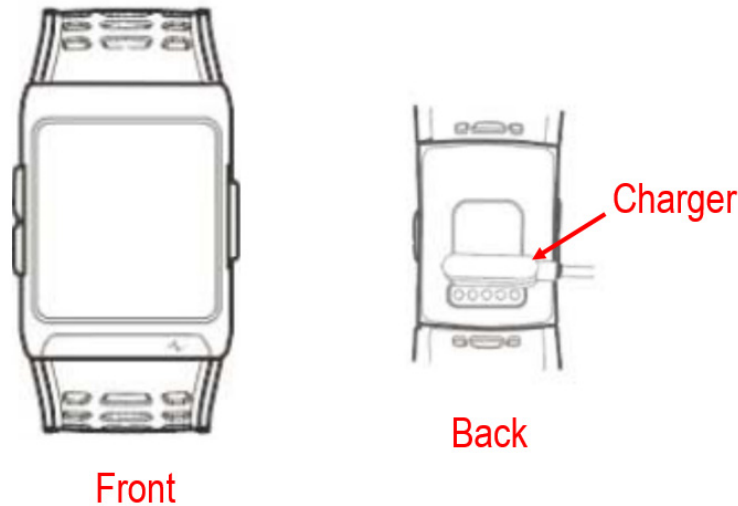
34. For example, the Vivomove HR is a smartwatch that includes a heart rate sensor and wellness features, such as stress tracking functionality. The Vivomove HR has a charger that functions to receive and align with a surface of the smartwatch, but it clearly does not include any recessed center portion. *See EX2002, 1.*



EX2002, 1 (annotated).

35. As another example, the P1 Watch is a smartwatch that includes a heart rate sensor for ECG and fatigue testing in addition to other sports fitness related monitoring features. The P1 Watch has an elongate (strip-shaped) charger that

functions to receive and align with a back surface of the watch, but it clearly does not include a circular concave recess or a compact puck shape. *See* EX2003, 1-2.

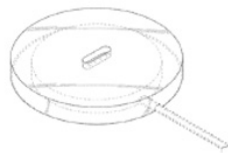


EX2003, 1-2 (annotated).

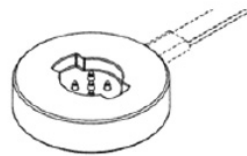
36. As illustrated below, there are numerous alternative designs provided by Petitioner's own submitted references that show no circular concave recess and/or a compact puck shape. *See* Pet., 27. For example, EX1028's design has a coin-shaped body and a flat major face with no concavity.



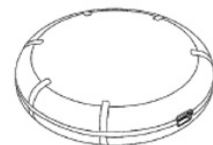
EX1028, FIG. 1



EX1029, FIG. 1



EX1034, FIG. 1



EX1026, FIG. 1

37. Simply put, there are alternative designs that accomplish the same or similar functions relied on by the Petitioner, while having a fundamentally different ornamental appearance.

38. As discussed in further detail below, references cited by the Petition itself also confirm the existence of alternative designs as to each of the features identified by the Petitioner as purportedly functional, and confirm that the identified features contribute to the ornamental appearance of the claimed design. As discussed in further detail below, alternative designs were known and available as to each of the elements of the '131 Patent's design that the Petitioner contends should be factored out.

39. These and other alternative designs accomplish the same or similar functions that the Petition attributes to the '131 patent's design elements, but have very different ornamental appearance than the '131 patent. Additional alternative designs for each of the features identified by the Petition as purportedly functional also exist.

1. The Circular Concave Recess

40. The multitude of alternative designs confirm that the '131 Patent's circular concave recess inset from a ring contributes ornamentally to its overall visual appearance. In addition to the above discussed references, the Petition provides additional alternative designs in its own cited references. The '846 utility patent

(US Pat. No. 9,460,846) is identified by the Petition, but the '846 utility patent provides multiple arrangements, shapes, and sizes of design features to achieve the stated purpose while having different appearances. These include an interface surface that is “substantially flat,” and/or the use of “one or more alignment mechanisms such as “alignment features, such as protrusions and corresponding indentations in the housings of the transmitter and receiver devices.” *See* EX1024, 7:22-23, 7:24-39.

41. The Petition also identifies the '783 utility patent (10,627,783), which similarly discloses multiple arrangements, shapes, and sizes of design features for interfacing and aligning inductive power transmitters and receivers. Pet., 19-20. For example, the '783 Patent explains that a “charging device may be proximate the electronic device but not necessarily touching or physically coupled.” *See* EX1025, 42:19-34. The '783 Patent describes an example of a charging device (gray) that has a “substantially flat” shape, e.g., the interfacing surface (green). *See* EX1025, 43:5-10, 43:22-25. The '783 Patent also discloses the use of “one or more additional housing features to assist with effecting mutual alignment,” like “such as protrusions and corresponding indentations” in the charging device. *See* EX1025, 43:22-25.

42. Each of the '846 utility patent and the '783 utility patent describes additional suitable alternative configurations of design features for interfacing and aligning

inductive power transmitters (chargers) and receivers (electronic). Based on my knowledge and experience in the field, this highlights that the specific appearance of the '131 patent design is not dictated by functional considerations. *See* Pet., 19-20.

43. Instead, other configurations could be used to achieve the same functions the Petition attributes to the circular concave recess of the '131 patent, and accordingly, the particular configuration claimed in the '131 patent is ornamental in nature.

2. The Compact Puck Design

44. Based on my review of various arrangements cited in the petition, there are many alternative designs for power transmission devices in which the overall shape and appearance varies. In addition to the references discussed earlier, Petitioner's own cited reference, the '783 utility patent, reflects multiple alternative shapes and sizes of charger design having suitable inductive power transmitters and receivers. For example, the '783 Patent describes various embodiments where "the dock [] may be larger than the device 100," the dock and mating device are "substantially the same size and shape," and "the dock 1802 and device 100 may take separate shapes." *See* EX1025, 44:1-19. Several other examples of alternative designs are shown in the Petition. *See* Pet., 27 (citing EX1014, ¶51).

45. Ultimately, the circular concave recess and the compact puck shape of the '131 Patent are each one of many design choices that contributes ornamentally to the Patent's overall appearance. I understand the Petition alleges that these features should be 'factored out' because they purportedly represent electronic components that serve a function in a device. However, the Petition includes examples that undermine and contradict this assertion because those examples provide the same or similar functionality while having a different appearance. The existence of these alternative designs indicates that the circular overall shape of the '131 patent is ornamental, and contributes to the overall appearance of the design. When properly considered against the actual overall appearance of the claimed design, the prior art of Grounds 1-7 are plainly different and do not render the design claim obvious.

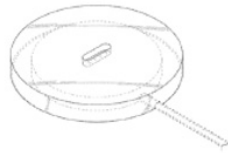
46. The above alternative designs (reproduced below) show an array of power transmission devices or chargers that are arranged in a variety of ways.



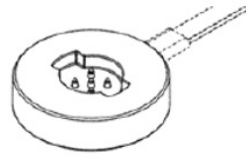
EX2002, 1 (annotated).



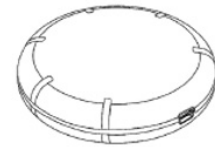
EX1028, FIG. 1



EX1029, FIG. 1



EX1034, FIG. 1



EX1026, FIG. 1

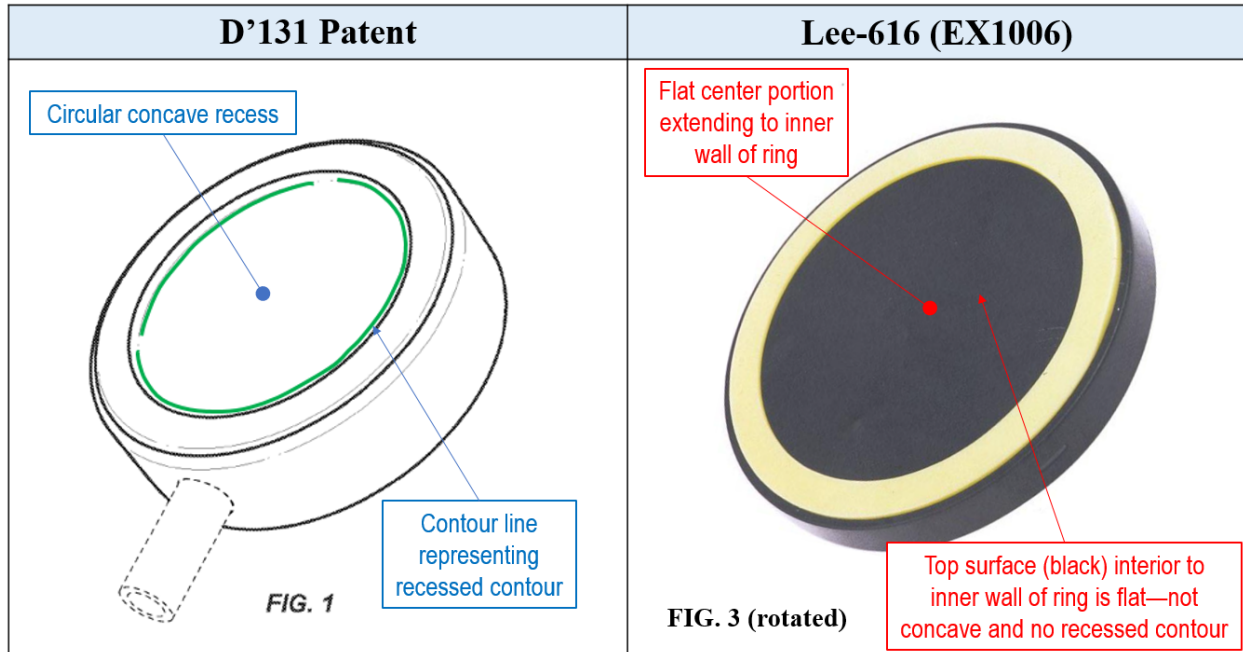
47. None of the above alternative designs include the compact puck design formed by the width-to-height ratio claimed in the '131 patent. Each of these additional alternative configurations supports my opinion that the overall width-to-height ratio are ornamental design features that contribute to the overall appearance of the compact puck design.

VI. THE '131 PATENT IS NOT OBVIOUS BASED ON GROUNDS 1-7

A. Ground 1: Lee-616 Alone Does Not Render the '131 Patent Obvious

48. Lee-616 has a very different overall appearance from the '131 Patent because of Lee-616's lack of a circular concave recess and distinct compact puck shape (e.g., width-to-height ratio), as well as other substantial differences from the claimed design.

49. As I discussed above, the '131 Patent depicts an elegant design with an overall appearance of a compact puck design having a distinctive circular concave recess formed on the top major surface that evokes an elegant nest or cradle. The circular concave recess is within the inner edge of the ring.



EX1001, FIG. 1 (annotated); EX1006, FIG. 3 (annotated) (rotated)

50. The circular concave recess in the '131 Patent is central to the overall appearance. Lee-616 lacks such a feature. I understand that the Petition dismisses this distinctive feature as allegedly functional. However, this does not address the deficiencies of Lee-616 with respect to the claimed design—Lee-616 lacks any concave recess in its top surface (depicted in black) that is inset from Lee-616's ring (yellow). Additionally, the compact puck shape, circular concave recess, and noticeably distinct width-to-height ratio are prominently visible features of the claimed design. Each feature contributes to an elegant, simple overall visual appearance. Yet, each of these features are absent from Lee-616.

51. I understand that the Petition attempts to suggest that because Lee has a flat “center portion that is surrounded by the top surface’s ring,” Lee-616 teaches features of the claimed design. Pet., 34. But nothing in Lee-616 shows that it has a circular *concave* recess in its design. The circular concave recess in the top face and the compact puck shape are prominent features that impact the patented design’s overall appearance; yet these features are absent from Lee-616. Each of these differences between Lee-616 and the claimed design results in an overall appearance that is meaningfully different and clearly not “basically the same” as the claimed design.

1. Lee-616 is Not a Proper Primary Reference

52. Based on my review of the ’131 patent and Lee-616, Lee-616 has an appearance very different from the claimed design and certainly not basically the same. For reasons noted below, I disagree with the Petition’s assumptions that “any differences between Lee-616 and the D’131 Patent do not change the overall visual similarity of the designs.” Pet., 39.

53. There are many readily apparent differences between the claimed design and Lee-616, some of which the Petition does not specifically address. For example, one feature includes the claimed design’s contour line that is inset from the ornamental

ring. EX1001, FIG. 1, FIG. 3. This contour line represents a circular concave recess at the center portion that is inset from the ring. Additionally, I note the Petition's Ground 1 analysis of Lee-616 relies on a "recessed center portion" that the Petition alleges to be present in Lee-616. I note, however, that Lee-616 never depicts such a recess at the center portion of its top surface (depicted in black), and the step transition from the top planar surface of Lee-616's ring (depicted in yellow) to the planar surface (depicted in black) of Lee-616's "center portion" is not the concave recess of the claimed design.

54. Lee-616 lacks the claimed design's distinctive circular *concave* recess that contributes to its nest or cradle visual appearance, and its compact body shape that resembles a compact puck, which are each central to the claimed design's overall visual appearance. Additionally, I note the Petition's obviousness theory is based on the premise that the circular concave recess at the center portion of the top major face is merely functional. Pet., 46.

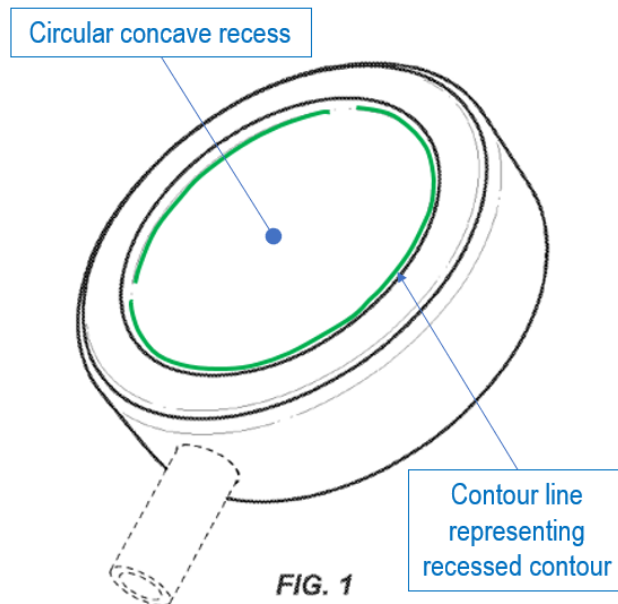
55. As discussed in earlier sections (§V.A, above), a DOSA would have understood that the claimed design's center portion has a recessed contour based on the contour line shown on the top major face in FIGS. 1, 3, and 9 of the '131 Patent. As shown in FIGS. 10 and 11, a DOSA would have also understood that this contour has concavity and is a circular concave recess at the design's top major face at least

based on the way the charger receives and interfaces with a convex bottom surface of a corresponding environmental device shown in FIG. 10. And yet this prominent feature of the center portion is simply not addressed in the Petition.

56. I understand that the Petition alleges “Lee-616 is an appropriate primary reference because its design conveys *basically the same* overall visual impression as the claimed design.” Pet., 40. But as discussed above, in making this assumption the Petition ignores multiple, prominent differences between the claimed design and Lee-616 that result in meaningfully different appearances that are certainly not “basically the same.”

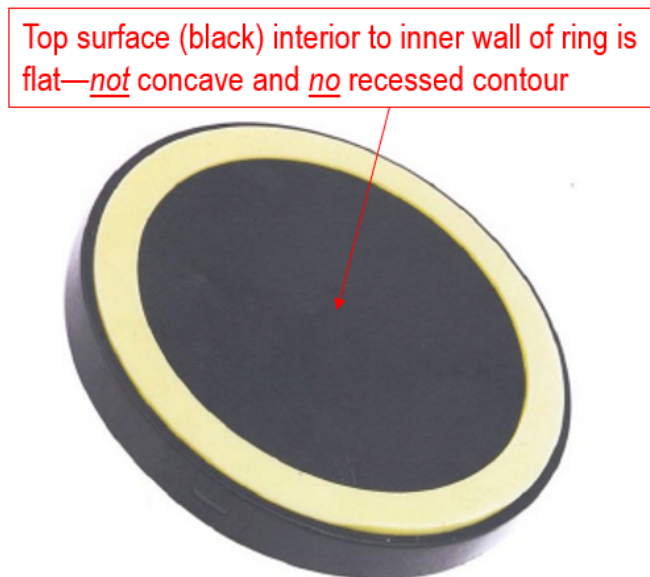
(a) Circular Concave Recess

57. Absent from Lee-616 is the claimed design’s more distinctive feature—the circular *concave* recess inset from a ring. The circular concave recess contributes to the claimed design’s resulting nest or cradle overall appearance. This key feature of the top of the claimed design is a fundamental aspect of the ’131 patent’s design that is meaningfully in its contribution to its overall appearance. But Lee-616 lacks this critical feature, and therefore lacks the overall visual appearance of the claimed design.



EX1006, FIG. 1(annotated).

58. Unlike the claimed design's circular concave recess, Lee-616 has a *flat* top surface that lacks any appearance of the *concave* recess of the '131 patent. In fact, Lee-616 is not shown to be contoured at all.



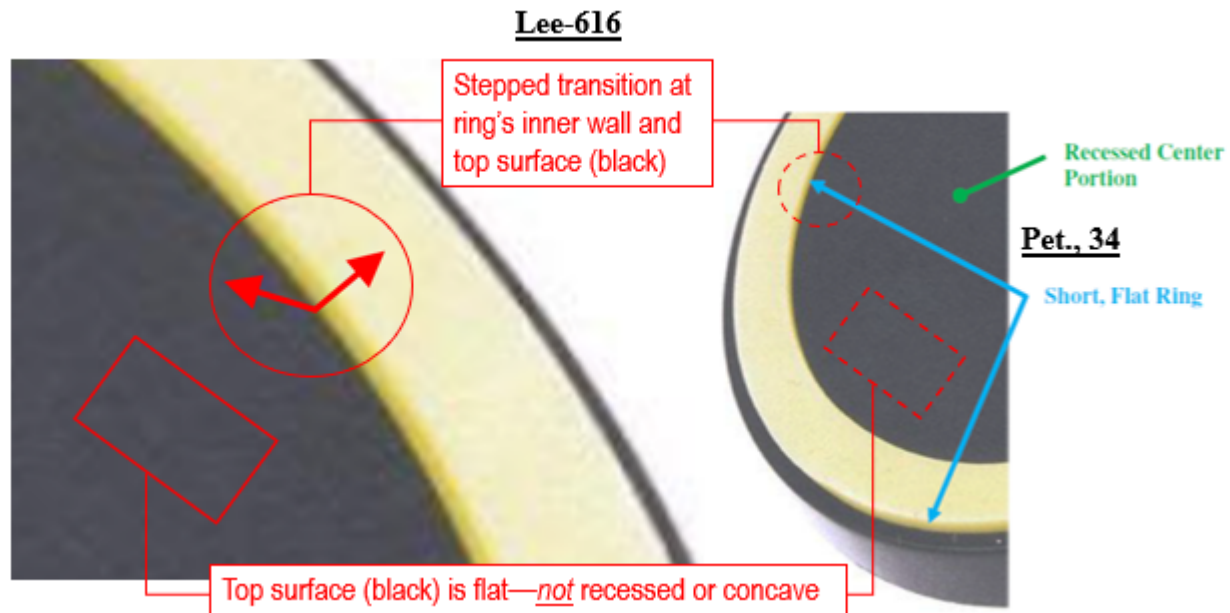
(EX1006, Fig. 3 (annotated)).

59. I note that the Petition does not identify any recessed contour present in a center portion in Lee-616's design. Instead, the Petition asserts that the recessed center portion of the '131 Patent "should be disregarded as a functional element of the claimed design" and that "even if considered, the recessed center portion of Lee-616 (surrounded by the yellow ring) and the claimed design [] provide the same overall visual impression." Pet., 46. But I disagree with these assertions for the reasons noted below.

60. First, as discussed above, the existence of multiple alternative designs are indications that the '131 patent design elements contribute ornamentally to the overall appearance of the '131 patent's design. Based on my knowledge and experience in the field, this highlights that the specific appearance of the '131 patent design, including the circular concave recess, is not dictated by functional considerations.

61. Second, unlike the patented design, Lee-616 does *not* have a top major face with a circular *concave* recess—or any recessed contour—that is a feature of the center portion inset from, and surrounded by, a ring. This difference alone meaningfully impacts the overall impression of Lee-616. Unlike the nest appearance conveyed by the circular concave recess of the claimed charger's top major face,

Lee-616 has a planar surface that is separated from other planar surfaces of Lee-616 by a step, consistent with Lee-616's stacked or stepped appearance.



EX1006, Fig. 3 (rotated) (annotated).

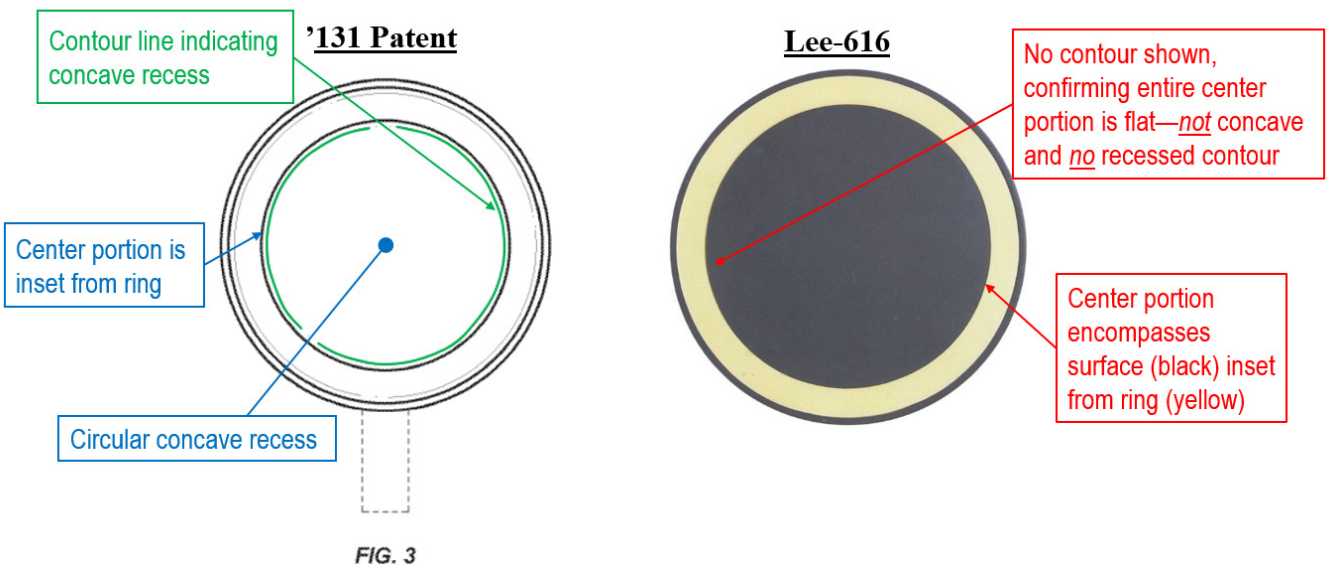
62. Moreover, as indicated above, I note that the Petition's characterization of the circular concave recess as merely a "recessed center portion" is inconsistent with the claimed design. *See* Pet., 34. Petitioner and its declarant mischaracterize the claimed circular concave recess as being a stepped transition between the two planar surfaces of Lee-616, completely ignoring the claimed contour line representing the claimed circular concave recess. But Lee-616 lacks any indications of a contour line at its flat top surface (depicted in black). The claimed circular concave recess is also

noticeably absent from Lee-616. For each of these independent reasons, Lee-616 has an entirely different overall appearance compared to the '131 patent's design.

63. The Petition asserts that “the recessed center portion of Lee-616 (surrounded by the yellow ring) and the claimed design [] *provide the same overall visual impression.*” Pet., 46. This is incorrect and does not remedy the Petition's failure to address the circular concave recess, and thus ignores this readily apparent difference between the claimed design and Lee-616.

64. The Petition does not address that Lee-616 lacks any contour in its central surface at all. The claimed design plainly includes a contoured central surface, while Lee-616 has a completely flat appearance.

65. Relatedly, even assuming that the center portion of the claimed design was simply recessed without concavity (it is not), Lee-616 does not have any recessed features *in* its center (depicted in black) portion. Lee-616's central (depicted in black) surface is entirely flat and does not have any recess feature at all. *Id.*



EX1006, Fig. 3 (annotated).

66. For example, while contour lines of the claimed design are visible on the central surface (inset from the ring) when viewed from the top, no corresponding features are visible in Lee-616. Instead, Lee-616 has a step between the top of the ring (depicted in yellow) and the flat (depicted in black) surface, which the Petition mischaracterizes as a recessed center portion.

67. It is clear that Lee-616 lacks a *concave* recessed portion, which is never even mentioned by the Petition. Based on my knowledge and experience in the field, this feature meaningfully contributes to the claimed design's overall visual appearance. The Petition asserts that "the recessed center portion of Lee-616 (surrounded by the yellow ring) and the claimed design [] *provide the same overall visual impression*,"

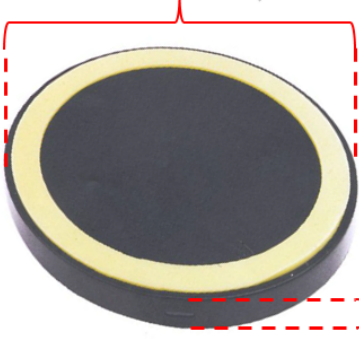
without even acknowledging these plain deficiencies between the claimed design and Lee-616. Pet., 46. The Petition also asserts that “Lee-616 discloses a recessed center portion *with basically the same design characteristics* as the claimed design.”

Pet., 47. I disagree at least because conspicuous features such as the *circular concave recess* that are lacking from Lee-616 results in a meaningfully different overall appearance compared to Lee-616.

68. The claimed contour line and the circular concave recess meaningfully contributes to the elegant nest or cradle overall appearance of the '131 patent's design. The Petition ignores it, and Lee-616 lacks it. As a result, Lee-616 does not have an overall appearance that is “basically the same” as the claimed design, and is not a proper primary reference.

(b) Compact Puck Design with Proportions that are Substantially the Same Ratio of Width-to-Height

69. The patented design has an overall visual appearance of a cylindrical compact puck, whereas Lee-616 does not. For example, looking at the figures of the '131 Patent, Lee-616 does not have proportions with substantially the same ratio of width-to-height as shown in those. Lee-616's design differs significantly from the compact, concave puck design of the '131 Patent. Rather, Lee-616's design has an overall appearance that is substantially wider and flatter.

D'131 Patent	Lee-616 (EX1006)
Proportional width-to-height ratio  FIG. 7 Elegant compact puck design	Wider than claimed design  Flatter than claimed design Irregular and disproportionate width-to-height ratio

EX1001, FIG. 7; EX1006, FIG. 3 (annotated).

70. Even assuming Petitioner's unauthenticated composite sideview was permissible (which it is not), this created figure allegedly shows that Lee-616's design noticeably suggests the appearance of a plate or a coaster.

D'131 Patent	Lee-616 (EX1006)
Proportional width-to-height ratio  FIG. 7 Elegant compact puck design	Irregular and disproportionate width-to-height ratio Petitioner's <u>Unauthenticated</u> Composites Purporting to Illustrate FIGS. 2-4 of Lee-616  Flatter than claimed design Wider than claimed design

EX1001, FIG. 7; Petitioner's Composites (annotated).

71. The Petition does not address the distinctive proportionality of the patented design relative to the stepped and disproportionate appearance depicted by Lee-616's width-to-height ratio—i.e., a substantially wider and flatter design. EX1006, FIG. 2, FIG. 3. Lee-616 has a width-to-height ratio that differs significantly from the noticeably distinct width-to-height ratio of the patented design.

72. Lee-616 does not have the noticeably distinct width-to-height ratio that contributes to the charger design's overall cylindrical shape. The Petition acknowledges that "[t]he Lee-616 cylinder *has a slightly larger width-to-height ratio than the claimed design*," but then wrongly concludes that the "difference, or any difference in the dimensions or proportions of the cylindrical shapes of Lee-616 and the claimed design, *does not alter the overall visual similarity of these designs*."

Pet., 43. However, this conclusion is moot because there is little visual similarity between the patented design and Lee-616.

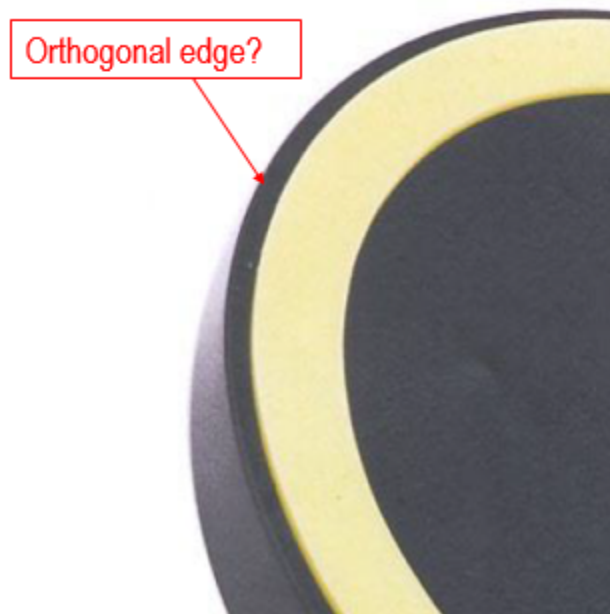
73. Petitioner simply never addresses the readily-visible dissimilarity of Lee-616. For example, Lee-616's flatter, wider dinner plate design does not evoke an impression of a design resembling a compact puck. This suggests that the Petition's purported "visual similarity" is negligible. The Petition ignores apparent differences between the two designs and does not offer any credible explanations for why a DOSA would consider Lee-616 to have "the same overall visual impression as the claimed design." Pet., 39, 40.

74. The width-to-height ratio of the claimed design is certainly not a *de minimis* difference relative to Lee-616's design. Quite the contrary, the width-to-height ratio is central to the claimed design's overall appearance. The width-to-height ratio is fundamental to the compact puck appearance of the claimed design. Its absence from Lee-616 indicates the reference is clearly deficient and cannot be applied as invalidating prior art against the '131 Patent.

(c) Compact Puck Shape Formed by the Non-Orthogonal Edges Between the Sidewall and the Top and Bottom Surfaces

75. The patented design has an overall compact puck design, whereas Lee-616 fails to show this. In particular, the claimed design does not show that it has non-

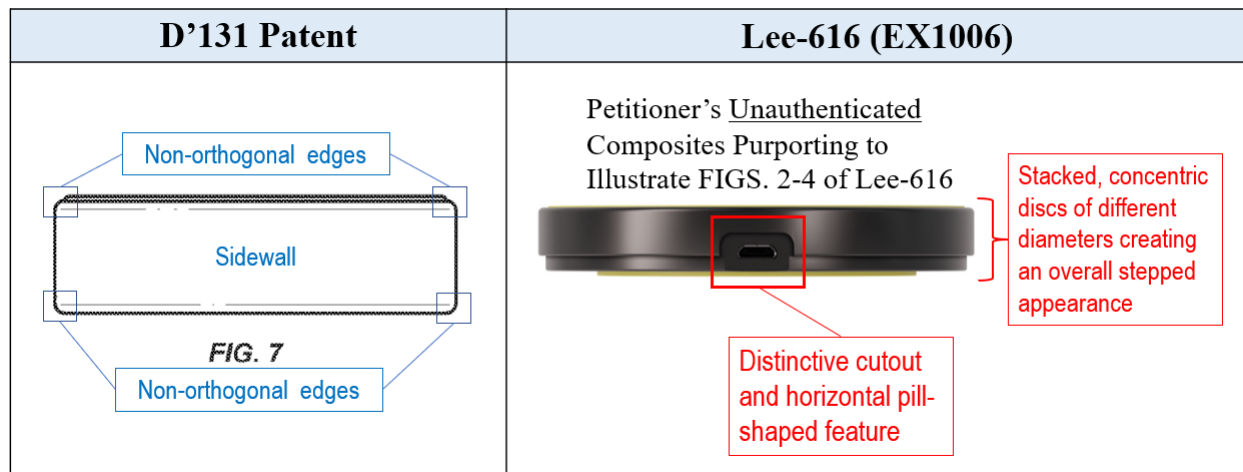
orthogonal edges between a sidewall and the top and bottom major faces because provide any side view of its design. See EX1006, FIGS. 1-4. According to Lee-616's available figures, the edges are either unascertainable or appears have orthogonal edges between the sidewall and its major surface.



EX1006, Fig. 3 (annotated).

76. Even assuming Petitioner's unauthenticated composite sideview was permissible (which it is not), the created figure allegedly shows that Lee-616's overall appearance is quite different from the continuous sidewall and non-orthogonal edges of the claimed design. Lee-616 includes stacked, concentric cylinders of different diameters creating a stepped sidewall design that is entirely

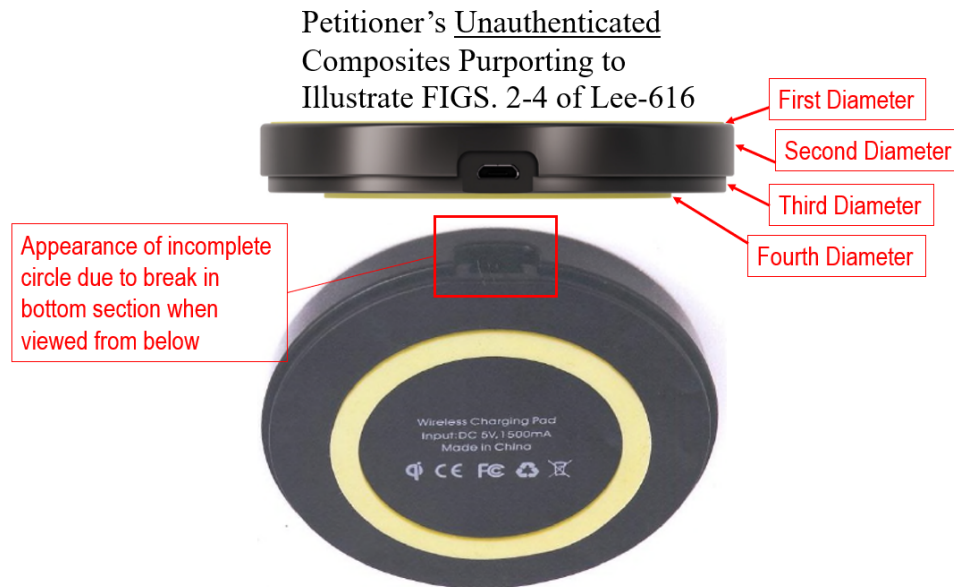
distinct from the visual appearance of the patented design. Even if an ordinary designer would have understood Lee-616 as including the claimed non-orthogonal edges of the '131 Patent (which Lee-616 never mentions and the Petition fails to demonstrate), Lee-616's appearance is starkly different than the claimed design.



EX1001, FIG. 7; EX1006, Petitioner's Composites (annotated).

77. Instead, Petitioner's unauthenticated composite sideview of Lee-616 includes stacked, concentric discs of different diameters creating an overall stepped appearance rather than the compact puck appearance conveyed by the claimed design.

78. Additionally, Petitioner's unauthenticated composite of Lee-616's sidewall includes a cutout that is visible on the bottom surface. When viewed from below, Lee-616's cutout gives the appearance of a broken bottom section, and lacks the appearance of a complete circle.



EX1006, FIG. 4 (rotated), Petitioner's Composites (annotated).

79. Here again, even the unauthenticated composite of Lee-616 appears to show that Lee-616 has substantially wider and flatter proportions that resemble a coaster or dinner plate. Lee-616's flatter and wider proportions are a significant departure from the compact puck design of the '131 Patent. EX1006, 1 ("charging *pad mat*").

80. Further, Lee-616's stepped surfaces provide an overall more complex design having a stacked appearance that contrasts with the simple and elegant design of the '131 Patent. Lee-616 does not convey the distinctive visual impression of the claimed design's compact, concave puck design.

81. For at least these independent reasons, Masimo's Ground 1 does not demonstrate that Lee-616 is a proper primary reference.

2. The Proposed Modifications to Lee-616 go beyond what is depicted in the reference

82. I understand the Petition asserts that “any differences between Lee-616 and the claimed design are changes that were suggested by the prior art.” Pet., 48. But the Petition fails to identify a specific prior art reference from various “cylindrical chargers of various sizes and proportions...in the prior art.” Pet., 48. The Petition does not address why a DOSA would have arrived at the specific height-to-width ratio of the claimed design based on the “ubiquitous” chargers found in the prior art.

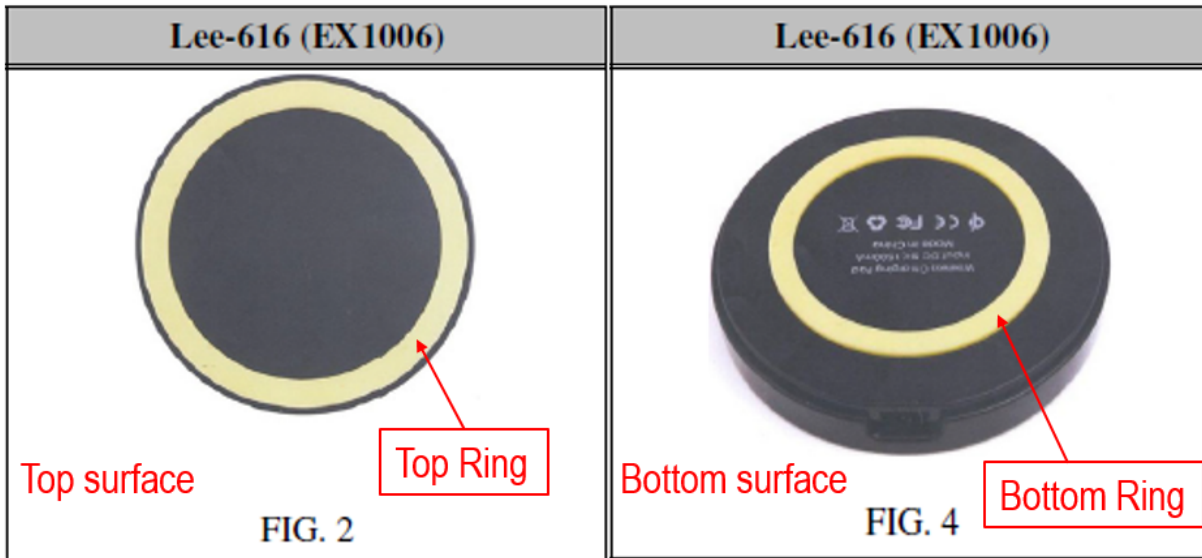
83. The Petition acknowledges that multiple additional modifications, beyond that depicted by Lee-616, are necessary to achieve the design of the ’131 Patent. The multiple additional modifications is evidence that Lee-616 on its own is not basically the same as the claimed design. *See, e.g.*, Pet., 48 (“any difference between the precise dimensions or proportions of the cylindrical chargers of Lee-616 and the claimed design would have been a routine change”), *id.* (“removing Lee-616’s step transition and bottom ring (Ground 1)”); 50 (“use a continuous sidewall between the top and bottom surfaces of the Lee-616 charger”); 51 (“remove the flat ring from the already flat bottom surface of Lee-616’s charger to provide a completely flat surface”). Notably these additional modifications are directed to features that are not taught by Lee-616 and that are not *de minimis*.

84. The Petition’s assertion that “any difference between the precise dimensions or proportions of the cylindrical chargers of Lee-616 and the claimed design would have been a routine change” because “cylindrical chargers of various sizes and proportions were ubiquitous in the prior art” does not demonstrate that such a change would have been considered by a DOSA, and that a DOSA would have further modified the proposed Lee-616 combination to achieve the claimed design’s specific appearance.

85. The Petition’s Ground 1 theory is based on Lee-616, yet cites to multiple references (Pet., 49) without the requisite analysis of why their appearances would have suggested application to Lee-616. Neither the Petition nor Petitioner’s declarant, Mr. Delman, demonstrate that the “precise dimensions or proportions of the cylindrical chargers” or “us[ing] a continuous sidewall between the top and bottom surfaces of the Lee-616 charger” was a “change known in the art.” Pet., 48.

86. The Petition asserts that a DOSA would “remove the flat ring from the already flat bottom surface of Lee-616’s charger to provide a completely flat surface” to “achieve a design, as shown above, that was simpler and more visually appealing.” Pet., 50. But the Petition ignores Lee-616’s stacked, concentric cylinders of different diameters, which create a stepped sidewall design that is entirely distinct from the visual appearance of the patented design. Indeed, Lee-616’s rings are part of an

overarching appearance that includes a ring on its top surface that is visually complementary to the ring on this bottom surface, as shown by FIGS. 2 and 4 (below). Pet., 51.



EX1006, Figs. 2 and 4 (as shown in Pet. at 40 with added annotations).

87. The purported reason for modifying Lee-616’s bottom flat ring—to create a “simpler and more visually appealing” design—ignores that Lee-616 includes visually symmetry through its complementary top and bottom rings in combination with stepped portions along its body. The Petition never addresses that its proposed modifications would fundamentally alter the visual theme of Lee-616’s stepped, complex design. The Petition’s proposed modification and motivation to do so is unsupported and deficient.

B. Ground 2: Lee-616 and Chiang Do Not Render the '131 Patent Obvious

1. Lee-616 is Not a Proper Primary Reference

88. For the same reasons that I provided in the earlier Ground 1, Ground 2 is also deficient because the Petition does not demonstrate that Lee-616 is a proper primary reference. *See* Ground 1.

2. The Petition Does Not Demonstrate that it Would Have Been Obvious to a DOSA to Modify Lee-616 in view of Chiang to Create the Claimed Design

89. The Petition wrongly relies on alterations that significantly change Lee-616's appearance, in a failed attempt to recreate the patented design. There are gaps in the Petition's analysis that highlight that the Petition does not demonstrate unpatentability of the '131 design patent based on its submitted evidence.

a) Chiang Is Not an Appropriate Secondary Reference

90. The Petition fails to show that Chiang's power bank designs are "so related" to Lee-616 that "the appearance" of certain ornamental features in Chiang would suggest the application of those features to Lee-616. The Petitioner's reliance on Chiang's description of a "power bank" as being so related to Lee-616 is flawed for multiple reasons, as describe below.

91. First, I note that the Petition selects two features from Chiang’s power bank for incorporation with Lee-616— the purported “flat bottom surface” and “continuous sidewall”—ignoring the remaining features of Chiang that are not shared with Lee-616. Pet., 55-56. Even if Chiang’s power bank were a proper secondary reference for combination with Lee-616, which I do not believe it is, no rationale is offered for why a DOSA would have used Chiang to modify Lee-616’s charging pad by selectively incorporating only those two features. For example, the Petition ignores multiple apparent differences between the two designs. Most notably, Chiang had a flat top surface; yet in its proposed combination the Petition ignores this prominent feature and selects only the flat bottom surface for incorporation in Lee-616.

92. Furthermore, the Petition consider the cutout differences between the Lee-616 and Chiang designs. For example, Lee-616 includes one distinctive cutout that intersects the stepped edge of its sidewall, whereas Chiang includes two cutouts that do not intersect its sidewall edges. Further, Lee-616 teaches a single, horizontal pill-shaped ornamental feature, opposite to Lee-616’s cutout (corresponding to an light (shown in green) in the bottom left perspective view, as indicated in the Pet., 35); whereas Chiang teaches a pattern of four circular features, proximate to Chiang’s two cutouts. But, here again, the Petition does not explain why Chiang suggests

application of two isolated features to the exclusion of other apparent features of Chiang that contribute to its appearance.

93. Indeed, Masimo’s selective modifications are undermined by Masimo’s own rational to “achieve a design that was smoother.” Chiang also includes a smooth, flat top surface. EX1009, *See* FIGS. 1, 2, 6. Yet, the Petition selectively incorporates isolated features of Chiang, to the exclusion of other “smooth” surfaces of Chiang, highlighting the Petitioner’s reliance on impermissible hindsight to reconstruct the claimed design from disparate elements.

94. Second, the Petition never addresses visibly prominent differences of Chiang in comparison to Lee-616. These differences result in distinct visual appearances such that Lee-616 and Chiang are not so related that the appearance of ornamental features in Chiang would suggest the application of those features to Lee-616, or vice versa. Lee-616’s complex design has prominent, irregular step transitions in addition to protruding rings on both top and bottom surfaces that evoke a complex, stepped design. The Petitioner’s assumption that a DOSA would have incorporated vastly dissimilar features from Chiang’s simplistic and plain design, such as a smooth sidewall, ignores this overall appearance of Lee-616’s complex design. The Petition fails to explain why a DOSA would have modified Lee-616 with such vastly

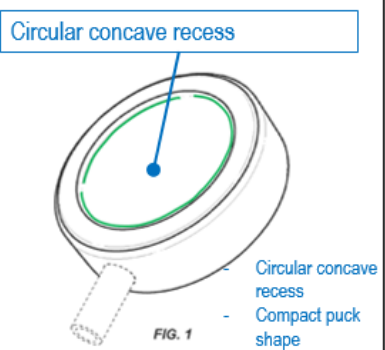
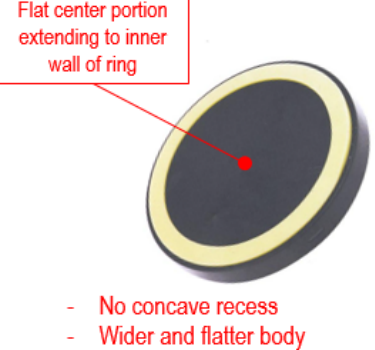
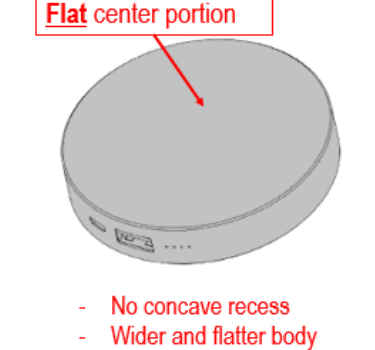
different features from Chiang and propose modifications that deviate substantially from the complex overall visual appearance provided by Lee-616.

95. Third, the Petition’s proposed combination results in a design that is dissimilar from both Lee-616 and Chiang. The Petition’s proposal to selectively combine “Chiang’s cylinder sidewall and flat bottom surface with Lee-616” (Pet., 71), ignores the complementary top and bottom surfaces of Lee-616, which have visual similar protruding rings, and the complementary top and bottom surfaces of Chiang, which are each relatively planar. The complementary top and bottom surfaces in each of these designs are dismissed in favor of the Petition’s proposal to have a protruding ring on a top surface only, eliminating Lee-616’s bottom ring and series of steps.

96. The Petition’s proposed modifications of Lee-616 based on Chiang are unsupported by any sufficient explanation and are fatally deficient. Petitioner asserts that “a DOSA would have been motivated to combine Chiang’s cylinder sidewall and flat bottom surface with Lee-616’s charger *for the same reasons explained above with respect to modifying Lee-616 alone.*” Pet., 56-57. Petitioner fails to articulate any suitable rationale explaining why a DOSA would have been motivated to modify and discard, for example, Lee-616’s prominent step transitions in favor of Chiang’s smooth sidewall.

b) The Petition Does Not Demonstrate that Lee-616, as modified by Chiang, Creates the Same Overall Visual Appearance as the Claimed Design

97. Additionally, even if the combination were proper (which it is not for reasons noted above), Petitioner’s proposed modifications of Lee-616 based on Chiang do not result in a design that is “the same” as the claimed design. In particular, the combination of Lee-616 modified by Chiang does not convey the distinctive visual impression of a unique design for a “charger” with an overall appearance of a compact puck having a distinctive circular concave recess on the top major face that evokes an elegant nest or cradle appearance. The Petition never mentions the distinctive circular concave recess, and thus Masimo’s modified design lacks the overall appearance resulting from this feature. Likewise, Masimo’s proposed modified design lacks the distinctive width-to-height ratio that contributes to its compact puck design. As shown below, because neither Lee-616 nor Chiang have a circular concave recess or a compact puck shape, the alleged combination would also fail to render obvious the claimed design’s two key features. Each of these differences alone result in an overall appearance that is distinct from the overall appearance provided by the patented design. Ground 2 fails for at least these reasons.

D'131 Patent	Lee-616	Chiang
 Circular concave recess FIG. 1 - Circular concave recess - Compact puck shape	 Flat center portion extending to inner wall of ring - No concave recess - Wider and flatter body	 Flat center portion - No concave recess - Wider and flatter body

EX1001, FIG. 1 (annotated); EX1007, FIG. 4 (annotated); EX1009, FIG. 1 (annotated)).

98. Since the overall appearance of the charger’s patented design differs significantly from the proposed combination of Lee-616 and Chiang at least due to the claimed design’s circular concave recessed portion and its compact puck shape, the proposed Lee-616-Chiang combination fails.

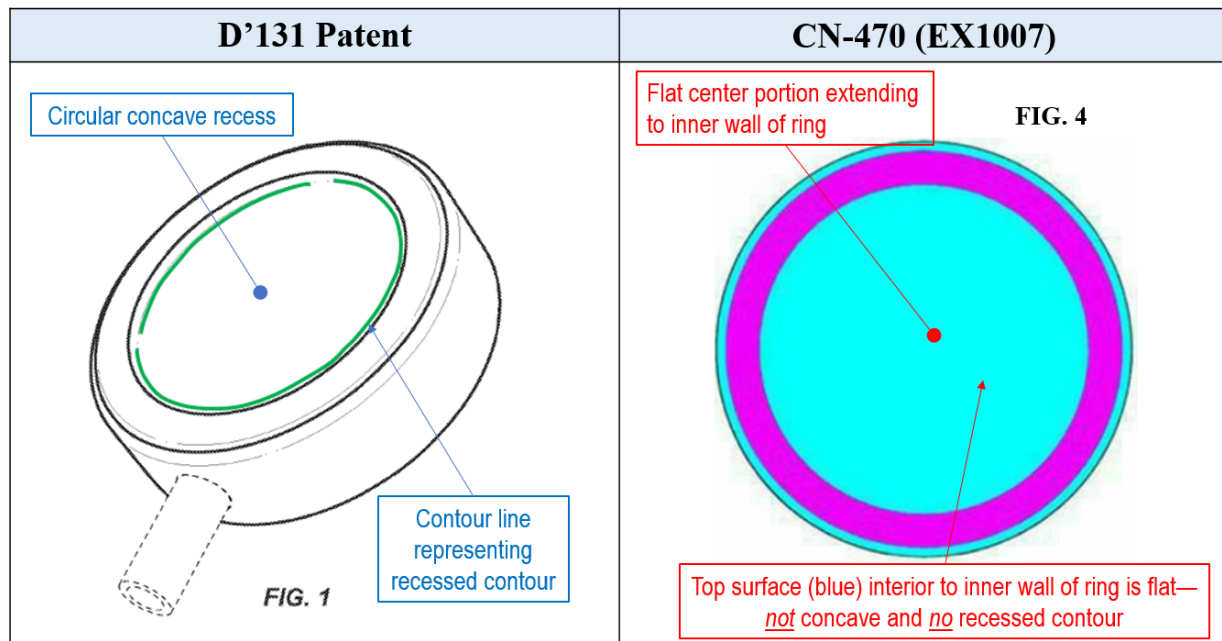
3. Chiang’s Design is for a Power Bank not a Charger

99. Unlike the claimed design, Chiang provides an aesthetic design for a design titled “Power bank”—not a “Charger” as titled in the ’131 Patent. A power bank design is nonanalogous art to a charger because a power bank is a portable device that serves as an external battery and does not have a charging surface. In contrast to Chiang’s “power bank,” a charging device design such as the claimed design would be associated with an ornamental appearance that highlights a charging

surface designed to interface with other devices needing to be charged. Accordingly, Chiang's design is not analogous to the claimed design and cannot be applied as invalidating prior art against the '131 Patent.

C. Ground 3: CN-470 Alone Does Not Render the '131 Patent Obvious

100. Petitioner's Ground 3 is also flawed for several reasons. The Petition does not demonstrate that CN-470 is a proper primary reference. Major aspects of the claimed design are missing from CN-470. Indeed, substantial differences between the '131 Patent and CN-470 indicate an overall lack of visual similarity among the two designs.



EX1001, FIG. 1 (annotated), EX1007, FIG. 4 (annotated).

101. As discussed above with reference to Lee-616, Section VI.A, the '131 Patent depicts an elegant design with an overall appearance of a compact puck design having a distinctive circular concave recess formed on the top major surface that evokes an elegant nest or cradle. The claimed design includes a top major face having a ring disposed at the top face, and the circular concave recess is present in a center portion of the top face.

102. The circular concave recess of the claimed design is central to its overall appearance. CN-470 lacks such a feature. I understand that the Petition dismisses this distinctive feature as allegedly functional. However, this does not address the deficiencies of CN-470 with respect to the claimed design— CN-470 lacks any concave recess in its top surface (depicted in blue) that is inset from the inner wall of CN-470's ring (depicted in pink). Additionally, the compact puck shape with its noticeably distinct width-to-height ratio are prominently visible features of the claimed design and convey an elegant, simple overall visual appearance. Yet, each of these features are absent from CN-470.

103. The Petition suggests that because CN-470 has a flat “center portion surrounded by the top surface's ring,” CN-470 somehow teaches features of the claimed design. Pet., 37. But nothing in CN-470 shows that it has a circular *concave* recess in its design. The circular concave recess in the top face and the compact

puck shape are prominent features that impact the patented design's overall appearance; yet these features are absent from CN-470. Each of these differences between CN-470 and the claimed design results in an overall appearance that is meaningfully different and clearly not "basically the same" as the claimed design.

1. CN-470 is Not a Proper Primary Reference

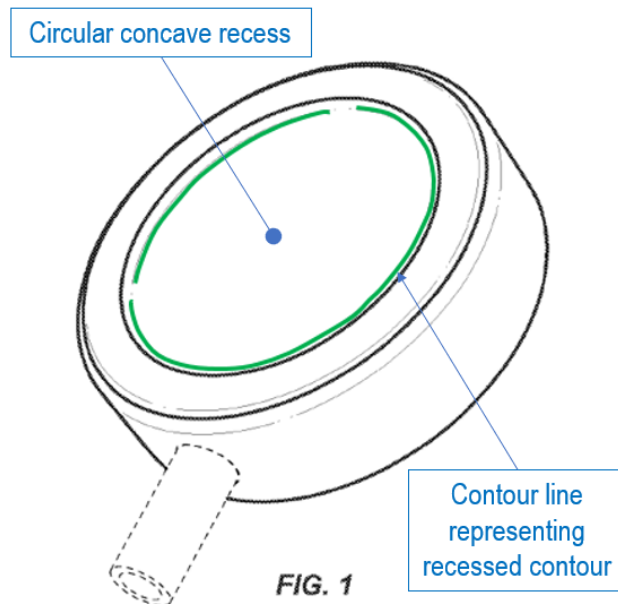
104. The Petition does not demonstrate that CN-470 is a proper primary reference. CN-470 has a very different appearance from the '131 Patent. CN-470 lacks the claimed design's distinctive circular *concave* recess that contributes to its nest or cradle visual appearance and its compact body shape that resembles a compact puck. Each of these features are central to the claimed design's overall visual appearance. Additionally, I note the Petition asserts that the circular concave recess at the center portion of the top major face is merely functional. Pet., 65. As discussed in earlier sections (§V.A, above), a DOSA would have understood that the claimed design's center portion has a recessed contour based on the contour line shown on the top major face in FIGS. 1, 3, and 9 of the '131 Patent. As shown in FIGS. 10 and 11, a DOSA would have also understood that this contour has concavity and is a circular concave recess at the design's top major face at least based on the way the charger receives and interfaces with a convex bottom surface of a corresponding

environmental device shown in FIG. 10. And yet this prominent feature of the center portion is simply not addressed in the Petition.

105. I understand that the Petition alleges “CN-470 is an appropriate primary reference because its design conveys *basically the same* overall visual impression as the claimed design.” Pet., 60. But in making this assumption, the Petition ignores multiple, prominent differences between the claimed design and CN-470 that result in meaningfully different appearances that are certainly not “basically the same.”

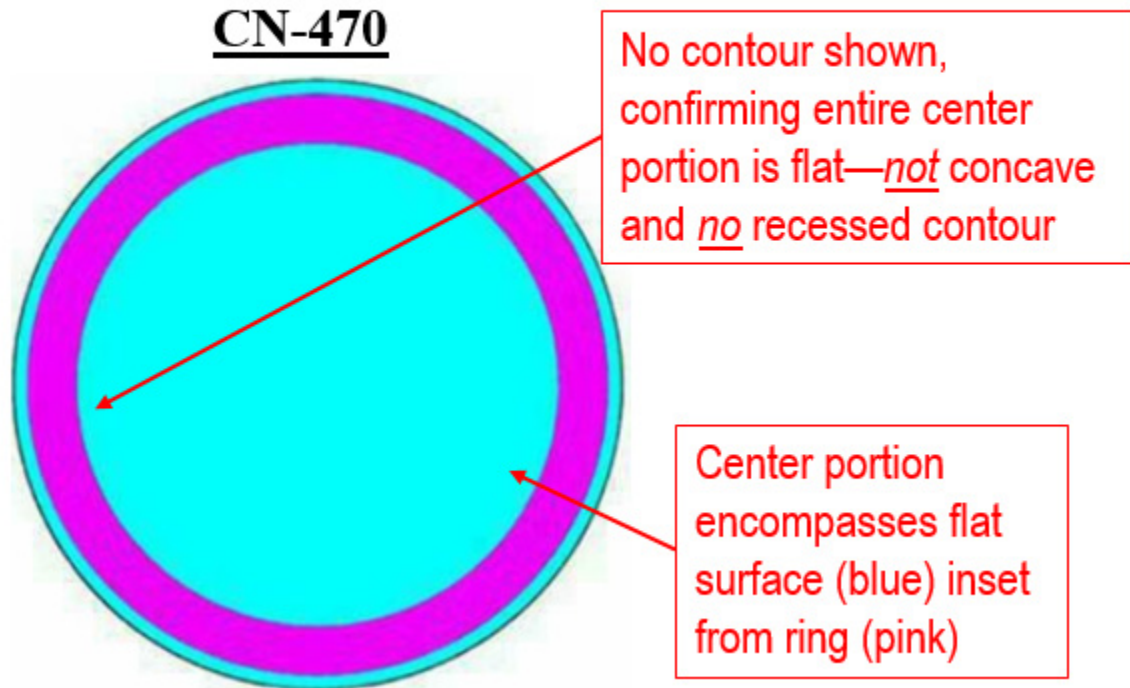
(a) *Circular Concave Recess*

106. CN-470 lacks the claimed design’s distinctive circular *concave* recess inset from a ring that contributes to the claimed design’s resulting nest or cradle overall appearance. This prominent feature of the top of the claimed design is a fundamental aspect of the ’131 patent’s design that meaningfully contributes to its overall appearance. CN-470 lacks this critical feature, and lacks the overall appearance of the claimed design.



EX1006, FIG. 1 (annotated).

107. Unlike the claimed design's circular concave recess, CN-470 has a *flat* top surface that lacks any appearance of the *concave* recess of the '131 patent, and is not shown to be contoured at all.



EX1007, FIG. 4 (annotated).

108. I note that the Petition does not identify any recessed contour present in a center portion in CN-470's design. Instead, the Petition asserts incorrectly that the recessed center portion of the '131 Patent "should be disregarded as a functional element of the claimed design" and that "even if considered, the recessed center portion of CN-470 (surrounded by the pink ring) and the claimed design [] provide the same overall visual impression." Pet., 65. But I disagree with these assertions for the reasons noted below.

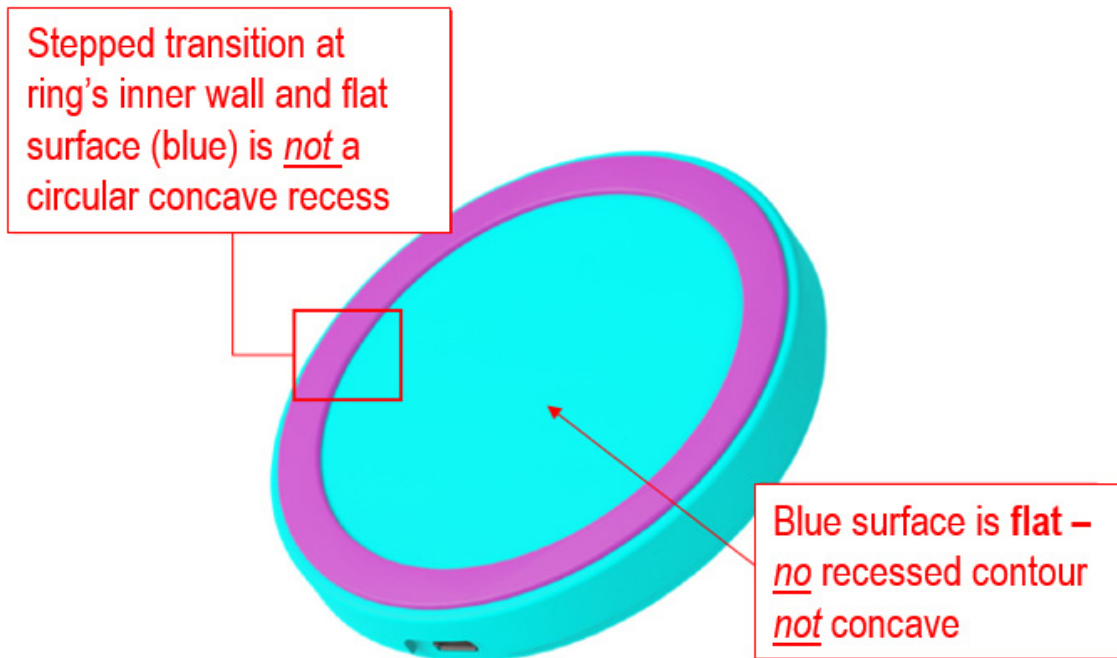
109. First, as discussed above, the existence of multiple alternative designs are indications that the '131 patent design elements contribute ornamentally to the overall appearance of the '131 patent's design. Based on my knowledge and experience in the field, this highlights that the specific appearance of the '131 patent design, including the circular concave recess, is not dictated by functional considerations.

110. Second, unlike the patented design, CN-470 does *not* have a top major face with a circular *concave* recess—or any recessed contour—that is a feature of the center portion inset from a ring.

111. This difference alone meaningfully impacts the overall impression of CN-470. Unlike the nest appearance conveyed by the circular concave recess of the claimed charger's top major face, CN-470 has a planar surface that is separated from other planar surfaces of CN-470 by a step, consistent with CN-470's stacked or stepped appearance.

112. As shown below, even assuming unauthenticated composite sideview was accurate (which it may not be), the created figure allegedly shows that the Petition's characterization of the circular concave recess as merely a “recessed center portion” is inconsistent with the claimed design. *See* Pet., 65. Additionally, Petitioner's reliance on CN-470's flat surface (blue) as disclosing a “recessed center portion”

because it is “surrounded by the pink ring” is insufficient to render the claimed design obvious. *Id.* Petitioner and its declarant mischaracterize the claimed circular concave recess as being a stepped transition between the two planar surfaces of CN-470, namely the surface atop the ring (pink) and the flat surface (blue) interior to the ring’s inner wall. But Masimo completely ignores the claimed contour line representing the claimed circular concave recess. And CN-470 lacks any indications of a contour line at its flat top surface(blue). The claimed circular concave recess is also noticeably absent from CN-470. For each of these independent reasons, CN-470 has an entirely different overall appearance compared to the ’131 patent’s design.

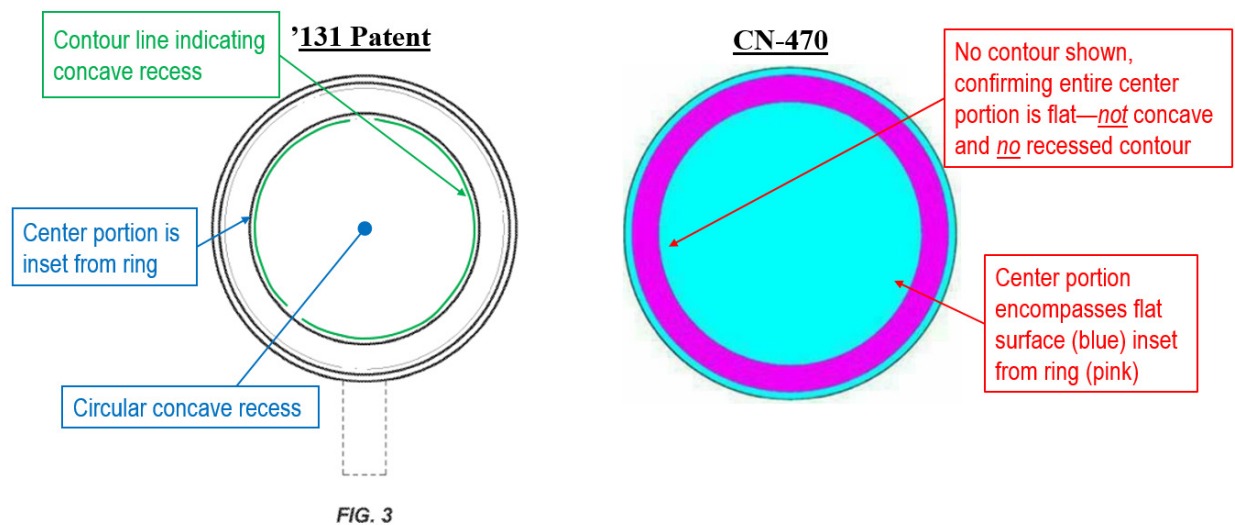


Petitioner's Unauthenticated
Composite of FIGS. 4-8

Petitioner's "Composite" Figure at Pet., 64 (annotated).

113. The Petition asserts that "the recessed center portion of CN-470 (surrounded by the pink ring) and the claimed design [] *provide the same overall visual impression.*" Pet., 65. This is incorrect and does not remedy the Petition's failure to address the circular concave recess, and thus ignores this readily apparent difference between the claimed design and CN-470.

114. The Petition does not address that CN-470 lacks any contour in its central surface at all. The claimed design plainly includes a contoured central surface, while CN-470 has a completely flat appearance. Relatedly, even assuming that the center portion of the claimed design was simply recessed without concavity (it is not), CN-470 does not have any recessed features *in* its center (blue) portion. CN-470's central (blue) surface is entirely flat and does not have any recess feature at all. *Id.*



EX1001, FIG. 3; EX1007, FIG. 4 (annotated).

115. For example, while contour lines of the claimed design are visible on the central surface (inset from the ring) when viewed from the top, no corresponding features are visible in CN-470. Instead, like Lee-616, CN-470 has a step between the top of the ring (pink) to the flat (blue) surface, which the Petition mischaracterizes as a recessed center portion.

116. It is clear that CN-470 lacks a *concave* recessed portion, which is never even mentioned by the Petition. Based on my knowledge and experience in the field, this feature meaningfully contributes to the charger design’s overall visual appearance. However, even with these clear deficiencies the Petition still asserts that “the recessed center portion of CN-470 (surrounded by the pink ring) and the claimed design [] *provide the same overall visual impression.*” Pet., 65. The Petition also asserts that “CN-470 discloses a recessed center portion *with basically the same design characteristics* as the claimed design.” Pet., 65. I disagree at least because a conspicuous feature such as the *circular concave recess* is a prominent difference between the claimed design and CN-470.

117. The claimed contour line and the circular concave recess meaningfully contributes to the elegant nest or cradle overall appearance of the ’131 patent’s design. The Petition ignores it, and CN-470 lacks it. As a result, CN-470 does not have an overall appearance that is “basically the same” as the claimed design, and is not a proper primary reference. Grounds 3 and 4 fail for this independent reason.

***(b) Compact Puck Design with Proportions
that are Substantially the Same Ratio of Width-
to-Height***

118. The patented design has an overall visual appearance of a cylindrical compact puck, whereas CN-470 does not. For example, CN-470 does not have proportions

with substantially the same ratio of width-to-height as shown in the figures of the '131 Patent. In contrast to the patented compact, concave puck design, CN-470's design has an overall appearance that is substantially wider and flatter. For example, CN-470's design noticeably suggests the appearance of a plate or a coaster.

D'131 Patent	CN-470 (EX1007)
Proportional width-to-height ratio  FIG. 7 Elegant compact puck design	Irregular and disproportionate width-to-height ratio  Substantially flatter than claimed design Substantially wider than claimed design

EX1001, FIG. 7 (annotated); EX1006, FIG. 6 (annotated).

119. The Petition does not address the distinctive proportionality of the patented design relative to the stepped and disproportionate appearance depicted by CN-470's width-to-height ratio—i.e., a substantially wider and flatter design. EX1007, FIG. 6, FIG. 7. CN-470 has a width-to-height ratio that differs significantly from the noticeably distinct width-to-height ratio of the patented design.

120. There is no dispute that CN-470 lacks the noticeably distinct width-to-height ratio that contributes to the charger design's overall cylindrical shape. Petitioner acknowledges that "[t]he CN-470 cylinder *has a slightly larger width-to-height*

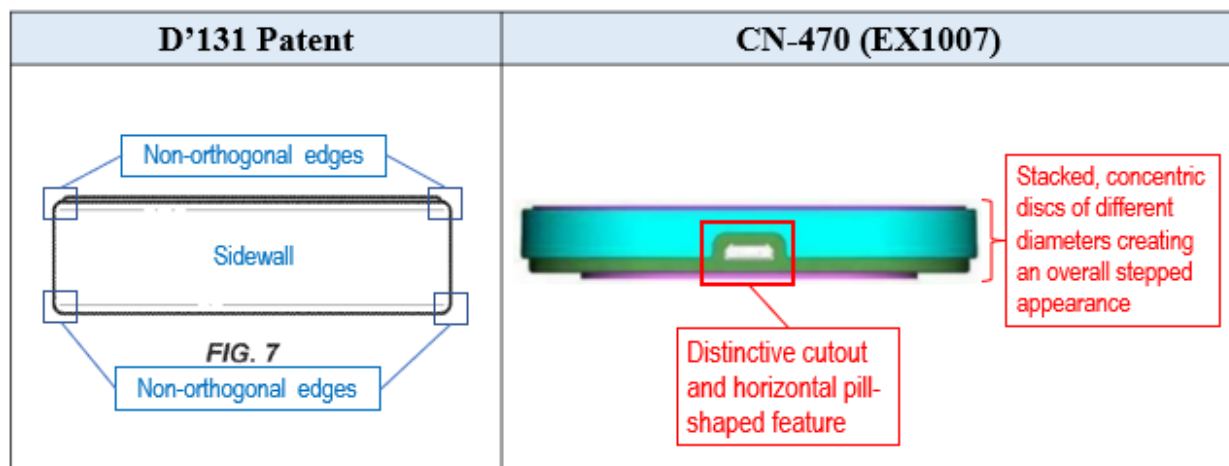
ratio than the claimed design,” but then wrongly concludes that the “difference, or any difference in the dimensions or proportions of the cylindrical shapes of CN-470 and the claimed design, *does not alter the overall visual similarity of these designs.”* Pet., 62. However, this conclusion is moot because there is little visual similarity between the patented design and CN-470.

121. Petitioner never addresses the readily-visible dissimilarity of CN-470. Unlike the claimed design that evokes a compact puck appearance, CN-470’s design is substantially wider and flatter, suggesting an overall appearance of a coaster or dinner plate. The Petition ignores this readily apparent difference, never offering any credible explanation for why a DOSA would consider CN-470 to have “the same overall visual impression as the claimed design.” Pet., 63, 66.

122. The width-to-height ratio of the claimed design is certainly not a *de minimis* difference relative to CN-470’s design. Quite the contrary, the width-to-height ratio is central to the claimed design’s overall appearance. The width-to-height ratio is fundamental to the compact puck appearance of the claimed design and its absence from CN-470 is a conspicuous deficiency.

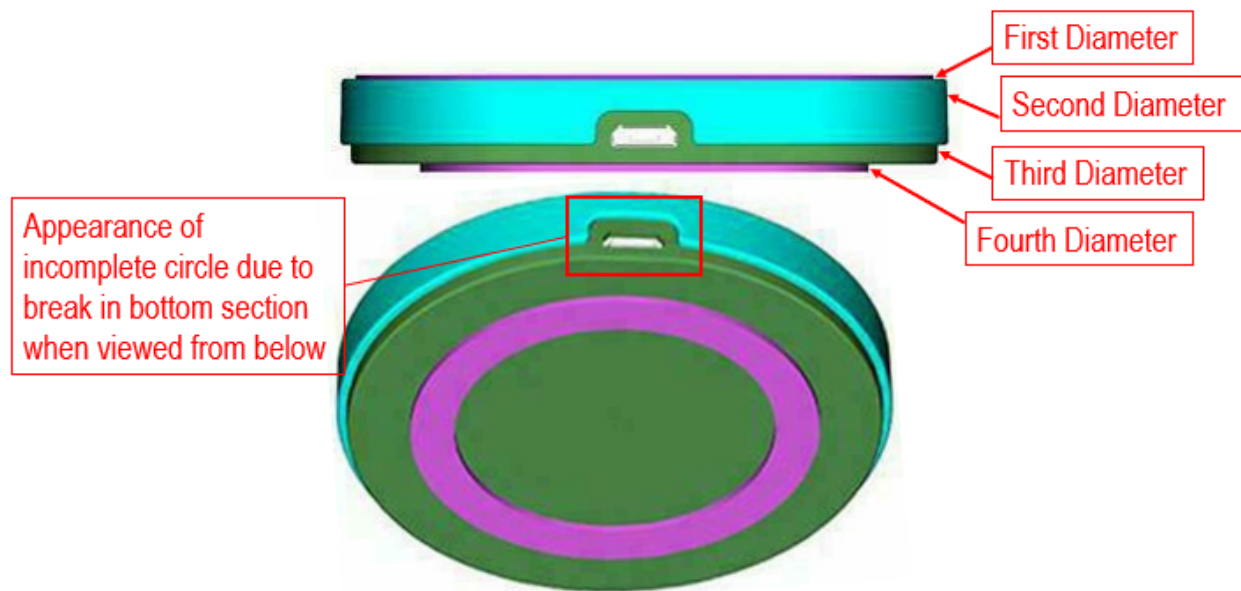
(c) Compact Puck Shape Formed by the Non-Orthogonal Edges Between the Sidewall and the Top and Bottom Surfaces

123. The patented design has an overall compact puck design, whereas CN-470 does not. In particular, the claimed design includes non-orthogonal edges between a sidewall and the top and bottom major faces. Together these features contribute to the overall compact puck appearance of the claimed design. In contrast, CN-470's overall appearance is quite different from the continuous sidewall and non-orthogonal edges of the claimed design. CN-470 includes stacked, concentric cylinders of different diameters creating a stepped sidewall design that is entirely distinct from the visual appearance of the patented design. Even if an ordinary designer would have understood CN-470 as including the claimed non-orthogonal edges of the '131 Patent (which CN-470 never mentions and the Petition fails to demonstrate), CN-470's appearance is starkly different than the claimed design.



EX1001, FIG. 7 (annotated); EX1007, FIG. 7 (rotated, annotated)).

124. Instead, CN-470 includes stacked, concentric discs of different diameters creating an overall stepped appearance rather than the compact puck appearance conveyed by the claimed design. Additionally, CN-470's sidewall includes a cutout that is visible on the bottom surface. When viewed from below, CN-470's cutout gives the appearance of a broken bottom section, and lacks the appearance of a complete circle.



EX1007, FIGs. 7 (top) and 8 (bottom, rotated) (annotated).

125. Here again, these features of CN-470 contribute to its substantially wider and flatter proportions that resemble a coaster or dinner plate. CN-470's flatter and

wider proportions are a significant departure from the compact puck design of the '131 Patent. EX1007, 4-7.

126. Further, CN-470's stepped surfaces are a more complex design having a stacked appearance that contrasts with the simple and elegant design provided by the '131 Patent. CN-470 does not convey the distinctive visual impression of the claimed design's compact, concave puck design.

127. For at least these independent reasons, Masimo's Ground 3 does not demonstrate that CN-470 is a proper primary reference.

2. The Proposed Modifications to CN-470 go Beyond the Design Depicted in the Reference

128. I understand the Petition asserts that "any differences between CN-470 and the claimed design would have been changes that were suggested by the prior art ... for the same reasons explained above with respect to the ground based on Lee-616 alone." Pet., 67. But the Petition fails to identify a specific prior art reference from various "cylindrical chargers of various sizes and proportions...in the prior art." (Pet., 48 – referring to Lee-616). The Petition also fails to address why a DOSA would have arrived at the specific height-to-width ratio of the claimed design based on the "ubiquitous" chargers found in the prior art. *See* Pet., 26, 48.

129. Indeed, The Petition acknowledges multiple additional modifications, beyond that depicted by CN-470, are necessary to provide features of the '131 Patent. The multiple additional modifications are evidence that CN-470 on its own is not basically the same as the claimed design. *See, e.g.*, Pet., 62 (“any difference in the dimensions or proportions of the cylindrical shapes of CN-470 and the claimed design, does not alter the overall visual similarity of these designs”), *id.* (“removing CN-470’s step transition and bottom ring (Ground 3)”); 66 (“using a continuous cylinder sidewall and a flat bottom surface with CN-470’s charger”); 66 (removing the “flat ring on the cylinder’s flat bottom surface”). Notably these additional modifications are directed to features that are not depicted by CN-470 and that are not *de minimis*.

130. For example, the Petition asserts that “[a]ny differences between the design of CN-470 and the claimed design would not prevent CN-470’s use as a primary reference” “because it discloses basically the same visual impression as the claimed design.” Pet., 65-66. But Petitioner fails to demonstrate that such a change would have been considered obvious by a DOSA, and that a DOSA would have modified the CN-470 design to achieve the claimed design’s overall appearance.

D. Ground 4: CN-470 and Chiang Do Not Render the '131 Patent Obvious

1. CN-470 is Not a Proper Primary Reference

131. For at least that the same reasons that I described above (*see* Ground 3), Ground 4 is deficient because the Petition fails to demonstrate that CN-470 is a proper primary reference.

2. The Petition Does Not Demonstrate that it Would Have Been Obvious to a DOSA to Modify CN-470 in view of Chiang to Create the Claimed Design

132. The Petition failed to recreate the patented design based on its modifications that significantly alter the appearance of CN-470. The Petition does not demonstrate the unpatentability of the design claim based on its evidence for the reasons that I describe in sections below.

(a) Chiang Is Not an Appropriate Secondary Reference for Combination with CN-470

133. Based on my knowledge and experience in the field, and my review of Chiang and CN-470, Chiang's power bank design is not "so related" to CN-470 that "the appearance" of certain ornamental features in Chiang would suggest the application of those features to CN-470. For the reasons that I provide below, the Petition's analysis of Chiang's "power bank" as being so related to CN-470 is flawed for multiple reasons.

134. As an initial matter, the Petition incorporates two features from Chiang’s power bank with CN-470—Chiang’s “flat bottom surface” and “continuous sidewall.” But by only incorporating two features, the Petition ignores many remaining features of Chiang that are not shared with CN-470. Pet., 71. Even if Chiang’s power bank was a proper secondary reference for combination with CN-470 (which it is not), the Petition did not provide any rationale for why a DOSA would have used Chiang to modify CN-470’s charging pad by selectively incorporating only those two features. The Petition does not address multiple prominent differences between the Chiang and CN-470 designs. For example, a flat top surface is present in Chiang’s design; yet the proposed combination only incorporates the flat bottom surface.

135. Furthermore, the Petition does not consider differences that are visual in the cutouts of the CN-470 and Chiang designs. For example, like Lee-616, CN-470 includes one distinctive cutout intersecting a stepped edge of the sidewall. In contrast, Chiang includes two cutouts in which neither of the two cutouts intersect the sidewall edges. Additionally, CN-470 shows a single, horizontal pill-shaped ornamental feature, opposite to CN-470’s cutout (corresponding to a ornamental light shown in green, as depicted in figure shown in the Pet., 35); whereas Chiang teaches a pattern of four circular features, proximate to Chiang’s two cutouts. But,

here again, the Petition does not explain why Chiang suggests application of two isolated features to the exclusion of these other apparent features of Chiang that contribute to its appearance.

136. The selective modifications described in the Petition are undermined by the rationale it provides to “achieve a design that was smoother.” Petition, 50, 72 (“And a DOSA would have been motivated to combine Chiang’s cylinder sidewall and flat bottom surface with CN-470’s charger for the same reasons explained above with respect to modifying Lee-616 alone. *Supra* §VI.B.2; EX1003 ¶104.”). Chiang also includes a smooth, flat top surface. EX1009, FIGS. 2-3, 6. However, the Petition only selectively incorporates isolated features of Chiang, to the exclusion of other “smooth” surfaces of Chiang, highlighting a flawed reliance in the Petition to reconstruct the claimed design from disparate elements.

137. Second, the Petition never addresses visibly prominent differences of Chiang in comparison to CN-470. These differences result in distinct visual appearances such that CN-470 and Chiang are not so related that the appearance of ornamental features in Chiang would suggest the application of those features to CN-470, or vice versa. CN-470 is a complex design having numerous complex features. For example, CN-470 has prominent, irregular step transitions in addition to protruding rings on both top and bottom surfaces that evoke a complex, stepped design. In vast

contrast, Chiang has a simplistic and plain design. The assumption provided in the Petition assumes that a DOSA would have incorporated vastly dissimilar features from Chiang's simplistic and plain design, such as a smooth sidewall, is flawed because the Petition ignores the overall appearance of CN-470's complex design. The Petition does not explain why a DOSA would have modified CN-470 with such vastly different features from Chiang and propose modifications that differ substantially from the complex overall visual appearance provided by CN-470.

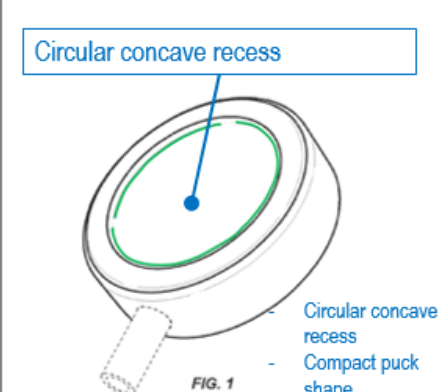
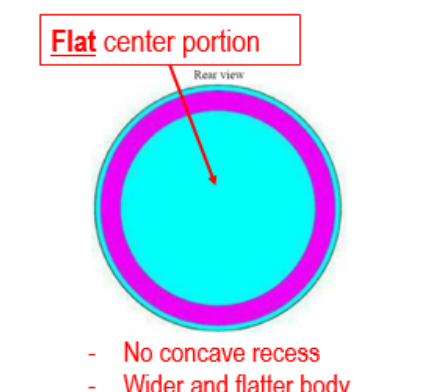
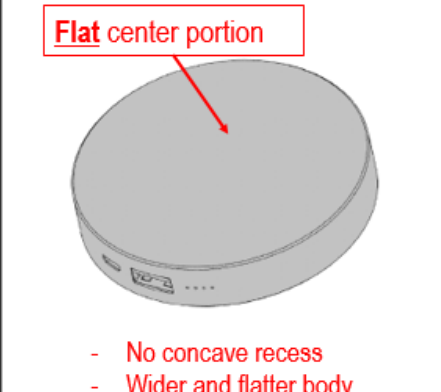
138. Third, the proposed combination provided in the Petition fundamentally changes CN-470's design to one that is dissimilar from both CN-470 and Chiang. The Petition provides a proposal to selectively combine "Chiang's cylinder sidewall and flat bottom surface with CN-470" (Pet., 71), however, ignores the complementary top and bottom surfaces of CN-470, which have visual similar protruding rings. Furthermore, this proposal also ignores the complementary top and bottom surfaces of Chiang, which are each relatively planar. The complementary top and bottom surfaces in each of the CN-470 and Chiang designs are dismissed in favor of the Petition's proposal to have a protruding ring on a top surface only, eliminating CN-470's bottom ring and series of steps. Consequently, the proposed combination yields a hybrid design that is dissimilar to both the CN-470 and Chiang designs.

139. The Petition’s proposed modifications of CN-470 based on Chiang are unsupported. The Petition states that “a DOSA would have been motivated to combine Chiang’s cylinder sidewall and flat bottom surface with CN-470’s charger *for the same reasons explained above with respect to modifying Lee-616 alone.*” Pet., 72. But the Petition fails to articulate a suitable reason to explain why a DOSA would have been motivated to remove, for example, CN-470’s notable step transitions in favor of Chiang’s smooth sidewall. For at least this reason, the Petition is deficient.

(b) Proposed Combination Does Not Create the Same Overall Visual Appearance as the Claimed Design

140. Petitioner’s proposed combination of CN-470 and Chiang does not create the same overall visual appearance as the compact puck design of the ’131 Patent. For reasons similar to those applied to Lee-616, the combination of CN-470 modified by Chiang does not convey the distinctive visual impression of a unique design for a “charger” with an overall appearance of a compact puck having a distinctive circular concave recess on the top major face that evokes an elegant nest or cradle appearance. The combination of CN-470 and Chiang lacks a circular concave recess. The proposed combination also lacks the width-to-height ratio that contributes to the compact puck design. For at least these missing features, the

proposed combination fails to provide an overall visual appearance conveyed by the claimed design. As shown below, because neither CN-470 nor Chiang have a circular concave recess or a compact puck shape, the alleged combination would also fail to render obvious the claimed design's two key features. Each of these differences alone result in an overall appearance that is distinct to the overall appearance provided by the patented design. Ground 4 fails for at least these reasons.

D'131 Patent	CN-470	Chiang
 Circular concave recess Circular concave recess Compact puck shape FIG. 1	 Flat center portion Rear view - No concave recess - Wider and flatter body	 Flat center portion - No concave recess - Wider and flatter body

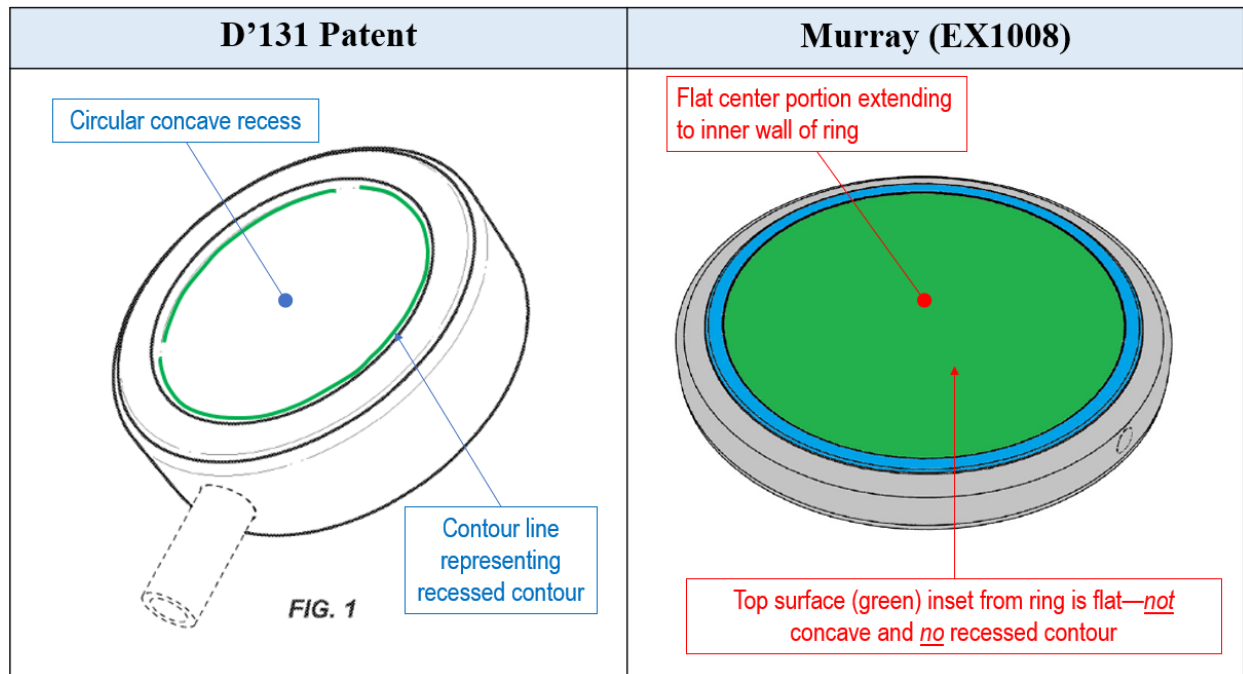
EX1001, FIG. 1 (annotated); EX1007, FIG. 4 (annotated); EX1009, FIG. 1 (annotated).

3. Chiang is a Design for a Power Bank Not a Charger

141. As I discussed above, Chiang does not provide art for a “Charger” and therefore cannot be applied as invalidating prior art against the '131 Patent. For this reason, Ground 7 fails.

E. Ground 5: Murray Alone Does Not Render the '131 Patent Obvious

142. Petitioner's Ground 5 is also deficient because it fails to demonstrate that Murray is a proper primary reference. Similar to my analysis provided for Lee-616 and CN-470, substantial aspects of the claimed design are missing from Murray. Consequently, the '131 Patent and Murray have substantial differences and there is an overall lack of visual similarity between these designs.



EX1001, FIG. 1 (annotated), EX1008; FIG. 1 at Pet., 76 (annotated)).

143. As discussed above with reference to Lee-616, the '131 Patent depicts an elegant design with an overall appearance of a compact puck design. The compact puck design further has a distinctive circular concave recess formed on a top major

surface that evokes an elegant nest or cradle. The claimed design includes the top major face having a ring disposed at the top face. The circular concave recess is located in a center portion interior to the inner walls of the ring.

144. The circular concave recess is central to the overall appearance of the patented design. Murray lacks such a feature. I understand that the Petition dismisses this distinctive feature as allegedly functional. Pet., 81. However, this does not address the deficiencies of Murray with respect to the claimed design—Murray lacks any concave recess in its top surface (depicted in black) that is inset from Murray’s ring (depicted in blue). Additionally, the compact puck shape, circular concave recess, and noticeably distinct width-to-height ratio are prominently visible features of the claimed design. Each feature contributes to an elegant, simple overall visual appearance. Yet, each of these features are absent from Murray.

145. The Petition suggests that because Murray has a flat “center portion (green) surrounded by the top surface’s ring,” Murray somehow teaches features of the claimed design. Pet., 38, 81. But nothing in Murray shows that it has a circular *concave* recess in its design. The circular concave recess in the top face and the compact puck shape are prominent features that impact the patented design’s overall appearance; yet these features are absent from Murray. Each of these differences

between the claimed design and Murray results in an overall appearance that is meaningfully different and clearly not “basically the same” as the claimed design.

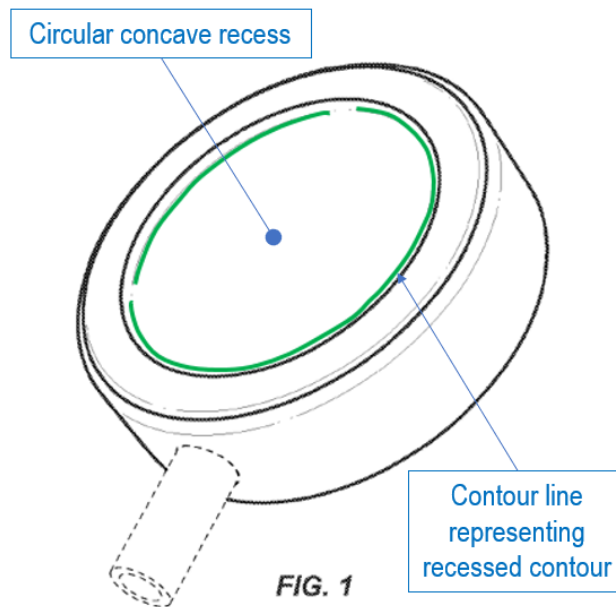
1. Murray is Not a Proper Primary Reference

146. The Ground 5 obviousness theory is defective because the Petition fails to demonstrate that Murray is a proper primary reference. Murray lacks the claimed design’s distinctive circular *concave* recess that contributes to its nest or cradle visual appearance and its compact body shape that resembles a compact puck. Each of these features are central to the claimed design’s overall visual appearance. The Petition asserts that the concave contour of the center portion of the top major face is merely functional. Pet., 81. As discussed in earlier sections, a DOSA would have understood that the claimed design’s center portion has a recessed contour and, further, that this contour has concavity; and yet this prominent feature of the center portion is simply not addressed in Masimo’s petition.

147. I understand that the Petition alleges “Murray is an appropriate primary reference because its design conveys *basically the same* overall visual impression as the claimed design.” Pet., 76. But in making this assumption, the Petition ignores multiple, prominent differences between the claimed design and Murray that result in meaningfully different appearances that are certainly not “basically the same.”

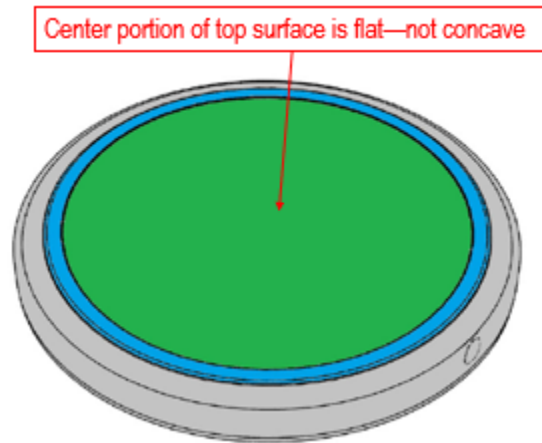
(a) Circular Concave Recess

148. Murray lacks the claimed design's distinctive circular *concave* recess inset from a ring that contributes to the claimed design's resulting nest or cradle overall appearance. This prominent feature of the top of the claimed design is a fundamental aspect of the '131 patent's design that meaningfully contributes to its overall appearance. Murray lacks this critical feature, and lacks the overall appearance of the claimed design.



EX1001, FIG. 1 (annotated).

149. Unlike the claimed design's circular concave recess, Murray has a *flat* top surface that lacks any appearance of the *concave* recess of the '131 patent, and is not shown to be contoured at all.



EX1008, FIG. 1 at Pet., 76 (annotated).

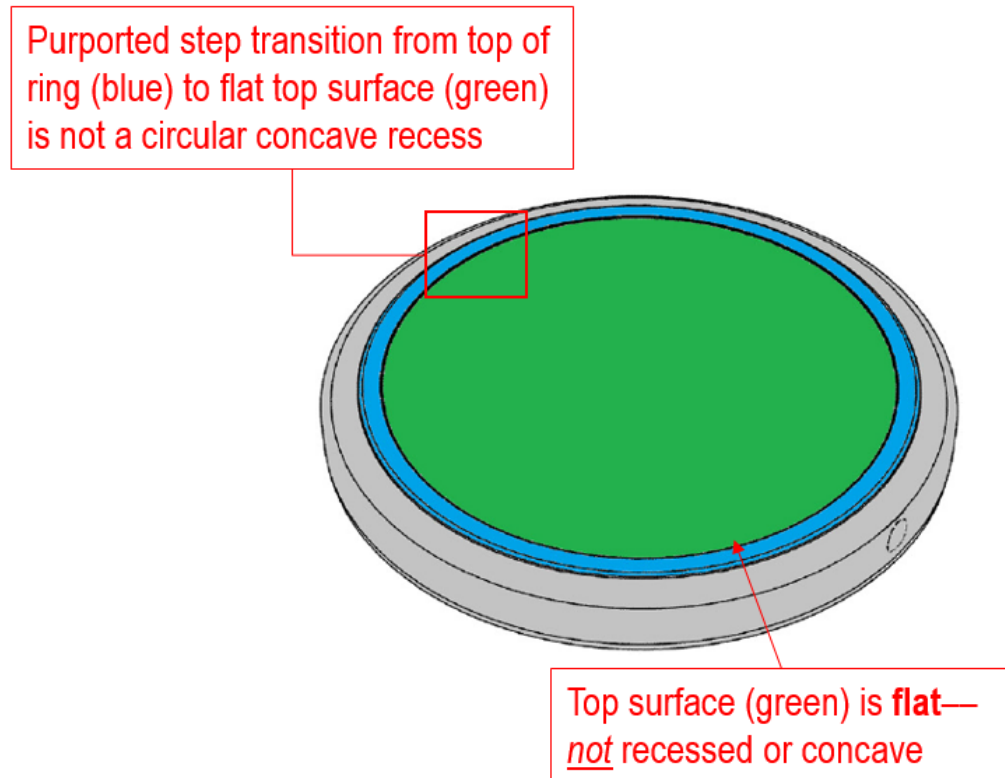
150. The Petition does not identify any recessed contour present in a center portion in Murray’s design. Instead, the Petition asserts that the recessed center portion of the ’131 Patent “should be disregarded as a functional element of the claimed design” and that “even if the recessed center portion is considered [...] the recessed center portion of Murray and the claimed design provide the same overall visual impression.” Pet., 82. But I disagree with these assertions for the reasons noted below.

151. First, as discussed above, the existence of multiple alternative designs are indications that the ’131 patent design elements contribute ornamentally to the overall appearance of the ’131 patent’s design. Based on my knowledge and experience in the field, this highlights that the specific appearance of the ’131 patent

design, including the circular concave recess, is not dictated by functional considerations.

152. Second, unlike the patented design, Murray does *not* have a top major face with a circular *concave* recess—or any recessed contour—that is a feature of the center portion inset from a ring.

153. This difference meaningfully impacts the overall impression of Murray. Unlike the nest appearance conveyed by the circular concave recess of the claimed charger's top major face, Murray has a planar surface that is separated from other planar surfaces of Murray by a step, consistent with Murray's stacked or stepped appearance.



EX1008, FIG. 1 at Pet., 76 (annotated).

154. Moreover, as indicated above, I note that the Petition’s characterization of the circular concave recess as merely a “recessed center portion (green)” is inconsistent with the claimed design. *See* Pet., 38. Additionally, Petitioner’s reliance on Murray’s green flat surface as disclosing a “recessed center portion” because it is “surrounded by the top surface’s ring” does not render the claimed design obvious.

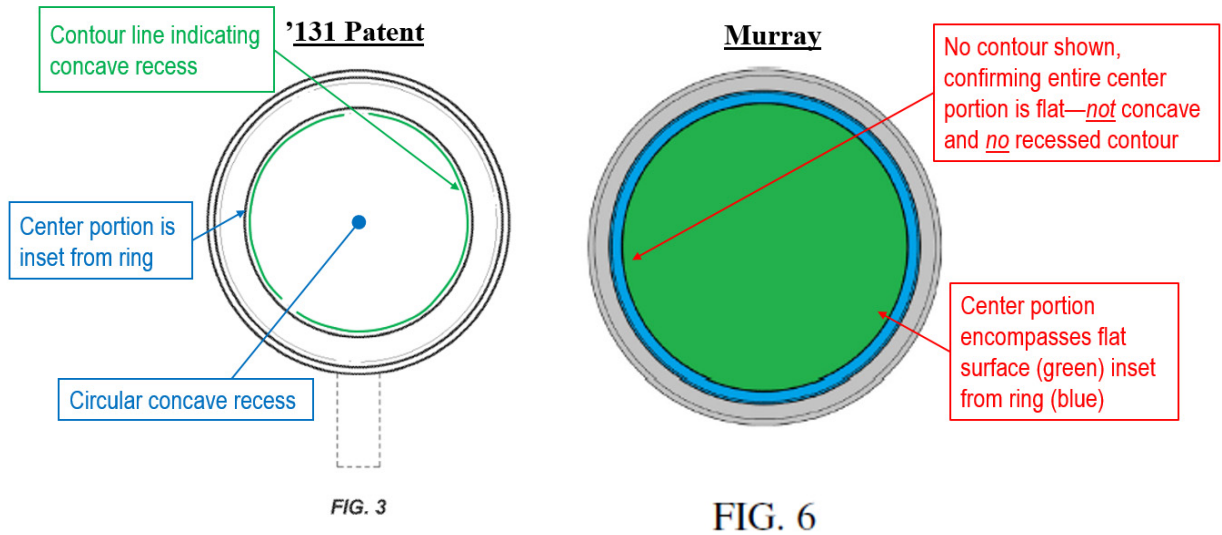
Id. Petitioner and its declarant mischaracterize the claimed circular concave recess as being a stepped transition between the two planar surfaces of Murray, namely the surface atop the ring (depicted in blue) and the flat surface (depicted in green)

interior to the ring's inner wall. But Murray does not show a step transition from the top surface of its ring (depicted in blue) to the flat surface (depicted in green).

155. Additionally, the Petition completely ignores the contour line representing the claimed circular concave recess. And Murray lacks any indications of a contour line at its flat top surface (green). The claimed circular concave recess is also noticeably absent from Murray. For each of these independent reasons, Murray has an entirely different overall appearance compared to the '131 patent's design.

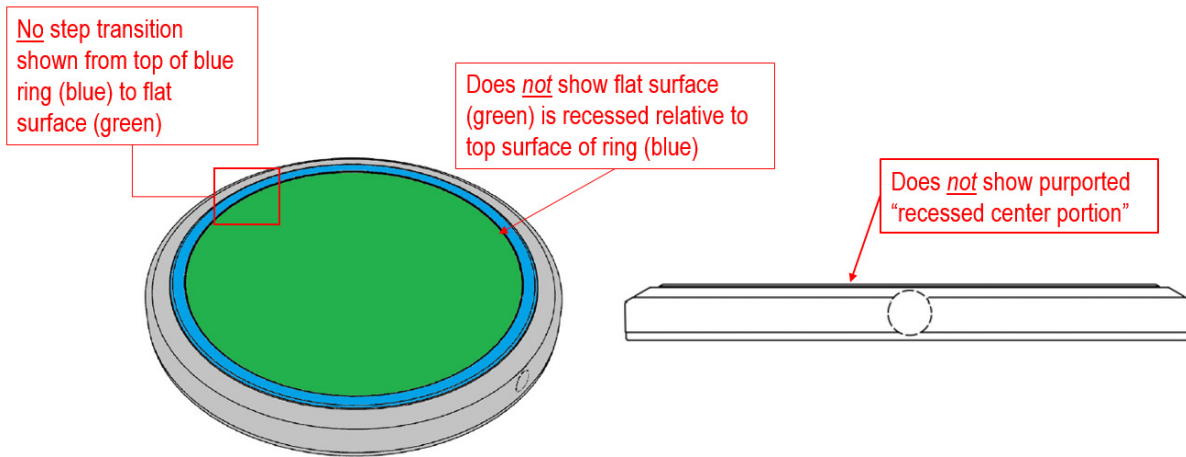
156. The Petition asserts that “the recessed center portion of Murray and the claimed design provide the same overall visual impression.” Pet., 81. This is incorrect and does not remedy the Petition's failure to address the circular concave recess, and thus ignores this readily apparent difference between the claimed design and Murray.

157. Murray lacks a recessed center portion of any kind. Additionally, the Petition does not address that Murray lacks any contour in its central surface at all. The claimed design plainly includes a contoured central surface, while Murray has a completely flat appearance. Relatedly, even assuming that the center portion of the claimed design was simply recessed without concavity (it is not), Murray does not have any recessed features *in* its center (green) portion. Murray's central (green) surface is entirely flat and does not have any recess feature at all. *Id.*



EX1001, FIG. 3 (annotated); EX1008, FIG. 6 at Pet., 77 (annotated).

158. For example, while contour lines of the claimed design are visible on the central surface (inset from the ornamental ring) when viewed from the top, no corresponding features are visible in Murray. Instead, like Lee-616 and CN-470, the Petition appears to rely on a purported a step between the top of Murray's ring (blue) to the flat (green) surface as teaching a recessed center portion. But unlike Lee-616 and CN-470, Murray does not show any step or recess between the inner wall of its ring (blue) and its flat top surface (green) surrounded by Murray's ring.



EX1008, FIG. 1 at Pet., 76 (annotated).

159. Murray lacks a both a “recessed center portion” and a *concave* recessed portion, and the latter is never even mentioned by the Petition. Based on my knowledge and experience in the field, the *concave* recessed portion feature meaningfully contributes to the charger design’s overall visual appearance. However, even with these clear deficiencies the Petition still asserts that “the recessed center portion of Murray and the claimed design provide the same overall visual impression.” Pet., 81. The Petition also asserts that “Murray discloses a recessed center portion *with basically the same design characteristics* as the claimed design.” Pet., 82. I disagree. A conspicuous feature such as the *circular concave recess* is a prominent difference between the claimed design and Murray.

160. The claimed contour line and the circular concave recess meaningfully contributes to the elegant nest or cradle overall appearance of the '131 patent's design. Petitioner ignores it, and Murray lacks it. As a result, Murray does not have an overall appearance that is "basically the same" as the claimed design, and is not a proper primary reference.

***(b) Compact Puck Design with Proportions
that are Substantially the Same Ratio of Width-
to-Height***

161. The patented design has an overall visual appearance of a cylindrical compact puck, whereas Murray does not. For example, Murray does not have proportions with substantially the same ratio of width-to-height as shown in the figures of the '131 Patent. Murray's design differs significantly from the compact, concave puck design of the '131 Patent. Rather, Murray's design has an overall appearance that is substantially wider and flatter. For example, Murray's design noticeably suggests the appearance of a plate or a coaster, even more so than the similarly deficient designs of Lee-616 and CN-470.

D'131 Patent	Murray (EX1008)
Proportional width-to-height ratio  FIG. 7 Elegant compact puck design	Disproportionate width-to-height ratio  Substantially flatter than claimed design Substantially wider than claimed design

EX1001, FIG. 7; EX1008, FIG. 3 (rotated) (annotated).

162. The Petition does not address the distinctive proportionality of the patented design relative to the disproportionate appearance depicted by Murray’s width-to-height ratio—i.e., a substantially wider and flatter design. EX1008, FIG. 3, FIG. 4. Murray has a width-to-height ratio that differs significantly from the noticeably distinct width-to-height ratio of the patented design.

163. Murray does not have lacks the noticeably distinct width-to-height ratio that contributes to the charger design’s overall cylindrical shape. The Petition acknowledges that “[t]he Murray cylinder *has a slightly larger width-to-height ratio than the claimed design,*” but then wrongly concludes that the “difference, or any difference in the dimensions or proportions of the cylindrical shapes of Murray and the claimed design, *does not alter the overall visual similarity of these designs.*”

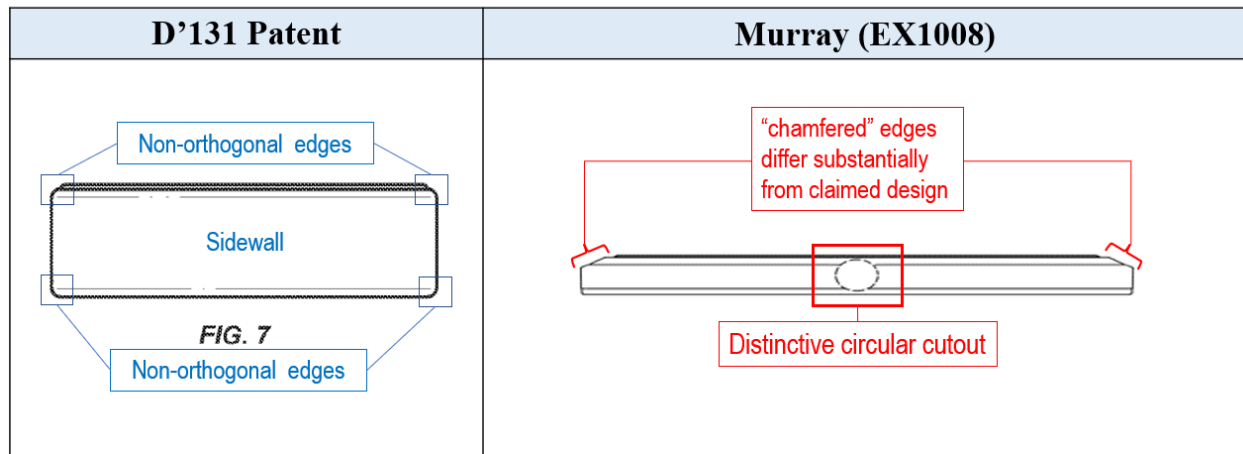
Pet., 78. However, this conclusion is moot because there is little visual similarity between the patented design and Murray.

164. Petitioner simply never addresses the readily-visible dissimilarity of Murray. For example, Murray’s flatter, wider dinner plate design does not evoke an impression of a design resembling a compact puck. This suggests that the Petition’s purported “visual similarity” is nonexistent. The Petition ignores apparent differences between the two designs and does not offer any credible explanations for why a DOSA would consider Murray to have “the same overall visual impression as the claimed design.” Pet., 83.

165. The width-to-height ratio of the claimed design is certainly not a *de minimis* difference relative to Murray’s design. Quite the contrary, the width-to-height ratio is central to the claimed design’s overall appearance. The width-to-height ratio is fundamental to the compact puck appearance of the claimed design and its absence from Murray is a conspicuous deficiency. Petitioner fails to present any evidence or analysis to support a conclusion that the width-to-height ratio are *de minimis* elements of the claimed design. Thus, Masimo fails to demonstrate that the distinct width-to-height ratio of the patented design is *de minimis*.

(c) Compact Puck Shape Formed by the Non-Orthogonal Edges Between the Sidewall and the Top and Bottom Surfaces

166. The patented design has an overall compact puck design, whereas Murray does not. In particular, the claimed design includes non-orthogonal edges between a sidewall and the top and bottom major faces. Together these features contribute to the overall compact puck appearance of the claimed design. In contrast, Murray's overall appearance is quite different from the continuous sidewall and non-orthogonal edges of the claimed design. Instead, Murray includes thin stacked, concentric discs, with chamfered upper edges at a transition between its middle and upper discs, creating the appearance of a different diameter between the middle and upper discs. This is entirely distinct from the visual appearance of the patented design. Even if an ordinary designer would have understood Murray as including the claimed non-orthogonal edges of the '131 Patent (which Murray never mentions and the Petition fails to demonstrate), Murray's appearance is very different than the claimed design.



EX1001, FIG. 7; EX1008, FIG. 3 (rotated).

167. Instead, Murray includes stacked, concentric discs of at least two different respective diameters from its chamfered upper edge creating an overall tapered (or slightly domed) appearance of the top surface, rather than the compact puck appearance conveyed by the claimed design. Additionally, Murray's sidewall includes a distinct cutout that is visible in Murray's front view. EX1008, FIG. 3. Importantly, irrespective of the viewing angle, Murray's top surface is completely flat. Here again, these features of Murray contribute to its substantially wider and flatter proportions that resemble a coaster or dinner plate. Murray's flatter and wider proportions are a significant departure from the compact puck design of the '131 Patent.

168. Further, Murray’s dissimilar design elements add needless complexity. For example, Murray’s elongated width, compressed height, and tapered top surface, contributes to an overall more complex design having a stacked appearance. These aspects of Murray’s design differ substantially from the simple and elegant design provided by the ’131 Patent. Murray simply does not convey the distinctive visual impression of the claimed design’s compact, concave puck design.

169. For at least these independent reasons, the Petition’s Ground 5 does not demonstrate that Murray is a proper primary reference.

2. The Proposed Modifications to Murray go Beyond the Design Depicted in the Reference

170. The Petition asserts that “differences between Murray and the claimed design would have been modifications that were suggested by the prior art.” Pet., 86. But the Petition fails to identify a specific prior art reference from various “cylindrical chargers of various sizes and proportions...in the prior art.” (Pet., 48). I note that the Petition fails to address why a DOSA would have arrived at the specific height-to-width ratio of the claimed design based on the “ubiquitous” chargers found in the prior art. *See* Pet., 26, 48.

171. The Petition acknowledges that multiple additional modifications, beyond that depicted by Murray, are necessary to provide features of the ’131 Patent. The

multiple additional modifications is evidence that Murray on its own is not basically the same as the claimed design . *See, e.g.*, Pet., 78 (“any difference in the dimensions or proportions of the cylindrical shapes of Murray and the claimed design, does not alter the overall visual similarity of these designs”).

172. Indeed, Murray requires substantial modifications to address its various deficiencies identified in the Petition, such as its “slightly larger width-to-height ratio than the claimed design” (Pet., 78), “chamfered instead of rounded top edges” (*Id.*, 79), “ring [that] is slightly farther from the outermost cylinder sidewall ... than the claimed design” (*Id.*, 80), “ring [that] is ... slightly narrower (less thick) than the claimed design” (*Id.*), and short “cylinder sidewall” (*Id.*, 83). But this extensive list of modifications are directed to features that are not depicted by Murray and are not *de minimis*.

173. For example, the Petition asserts that “any difference in the dimensions or proportions of the cylindrical shapes of Murray and the claimed design, does not alter the overall visual similarity of these designs” (Pet., 78) and that “[a]ny differences between the design of Murray and the claimed design would not prevent Murray’s use as a primary reference.” Pet., 79. But the Petition fails to demonstrate that such a change would have been considered obvious by a DOSA, and that a

DOSA would have modified the Murray design to achieve the claimed design's overall appearance.

174. The Petition's obviousness theory and proposed modifications fail for at least two reasons. First, the Petition's Ground 5 theory is based on Murray, yet cites to multiple references (Pet., 49) without the requisite analysis of why their designs are so related that their modification of Murray would have been obvious. The purported reason for "[m]odifying Murray's charger to use a continuous cylinder sidewall between the cylinder's top surface and bottom surface"—to achieve a "smoother, simpler, and more visually appealing" design—ignores that Murray includes visually symmetry through its compressed sidewall height in combination with its stacked discs and wide body. Pet., 83.

175. Indeed, Murray's shortened sidewalls and tapered upper edges are part of an overarching appearance, which includes its flat top surface, that is visually complementary to its flattened, wider design profile. The Petition never addresses that its proposed modifications would fundamentally alter the visual theme of Murray's complex, low-profile design. Masimo's proposed modification and motivation to do so is unsupported and deficient.

F. Ground 6: Murray and Chiang Do Not Render the '131 Patent Obvious

1. Murray is Not a Proper Primary Reference

176. For at least the same reasons that I provided above (in Ground 5), Ground 6 fails to demonstrate Murray is a proper primary reference.

2. The Petition Does Not Demonstrate that it Would Have Been Obvious to a DOSA to Modify Murray in View of Chiang to Create the Claimed Design

177. The Petition failed to recreate the patented design based on its modifications that significantly alter the appearance of Murray. The Petition does not demonstrate the unpatentability of the claimed design based on its evidence for the reasons that I describe in sections below.

(a) Chiang Is Not an Appropriate Secondary Reference for Combination with Murray

178. Based on my knowledge and experience in the field, and my review of Chiang and CN-470, Chiang's power bank design is not "so related" to Murray that "the appearance" of certain ornamental features in Chiang would suggest the application of those features to Murray. For the reasons that I provide below, the Petition's analysis of Chiang's "power bank" as being so related to Murray is flawed for multiple reasons, as I have described below.

179. First, the Petition incorporates only one feature from Chiang’s power bank with Murray— Chiang’s “a continuous cylinder sidewall.” Pet., 90-91. The Petition, however, ignores the many remaining features of Chiang that are not shared with Murray. *Id.* The Petition does not provide a rationale for why a DOSA would have used Chiang to modify Murray’s charger by selectively incorporating that single feature. Masimo ignores multiple apparent differences between the two designs, and why Chiang’s cutout design was not incorporated. Masimo fails to consider the cutout differences between the Murray and Chiang designs. Murray includes one distinctive circular cutout in its sidewall, whereas Chiang includes two cutouts and a pattern of four circular features, proximate to Chiang’s two cutouts, along its sidewall. But the Petition does not address why Chiang suggests application of one isolated feature to the exclusion of other apparent features of Chiang that contribute to its appearance.

180. Second, the Petition fails to address major visual differences of Chiang in comparison to Murray. These differences result in distinct visual appearances such that Murray and Chiang are not so related that the appearance of ornamental features in Chiang would suggest the application of those features to Murray, or vice versa. Murray’s design is complex, as it includes a prominent, beveled top edge and a top ring that is positioned inwardly and substantially spaced apart from the outer

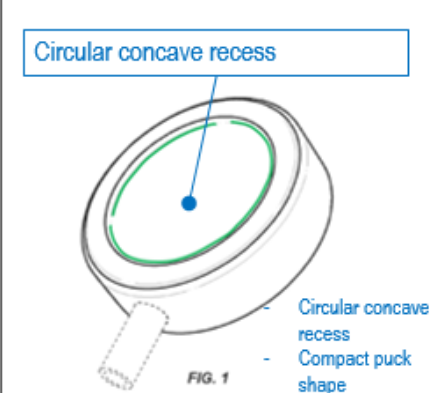
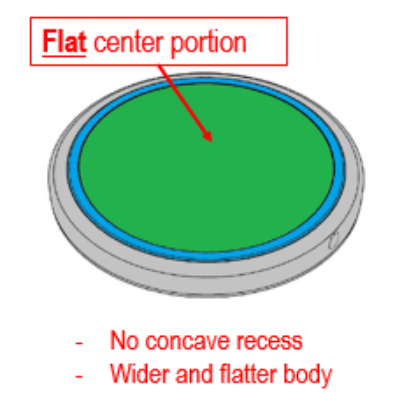
diameter edge of the top surface. These features provide Murray with a complex, asymmetrical design. In contrast, Chiang's design is simplistic, plain and symmetric. The assumption that a DOSA would have incorporated vastly dissimilar features from Chiang's simplistic and plain design, such as a smooth sidewall, fails to consider the overall appearance of Murray's complex asymmetrical design. In this way, the Petition does not sufficiently explain why a DOSA would have modified Murray with such vastly different features from Chiang and propose modifications that deviate substantially from the complex overall visual appearance provided by Murray.

181. The proposed modifications of Murray based on Chiang, as proposed in the Petition, are unsupported. The Petition states that “a DOSA would have been motivated to combine Chiang's cylinder sidewall with Murray's charger for the same reasons explained above *with respect to modifying Lee-616 alone.*” Pet., 91. But Petitioner fails to explain why modification of Lee-616 is relevant to an analysis of Murray—a prior art reference having a design that is different from Lee-616's design. Again, Petitioner fails to articulate a suitable reason to explain why a DOSA would have been motivated to remove Murray's asymmetrical body shape having a prominent chambered transition in its sidewall in favor of Chiang's simplistic, symmetrical smooth sidewall.

(b) The Petition Does Not Demonstrate that Murray, as modified in view of Chiang, Creates the Same Overall Visual Appearance as the Claimed Design

182. Petitioner’s proposed combination of Murray and Chiang does not create the same overall visual appearance as the compact puck design of the ’131 Patent. For reasons similar to those applied to Lee-616, the combination of Murray modified by Chiang does not convey the distinctive visual impression of a unique design for a “charger” with an overall appearance of a compact puck having a distinctive circular concave recess on the top major face that evokes an elegant nest or cradle appearance. The proposed combination of Murray and Chiang fails to show a circular concave recess. The proposed combination also fails to show proportions having substantially the same ratio of width and height, as shown by the figures of the claimed design, which contribute to the compact puck design. For at least these missing features, the proposed combination fails to provide an overall visual appearance conveyed by the claimed design. As shown below, neither Murray nor Chiang have a circular concave recess or a compact puck shape and, thus, the alleged Murray-Chiang combination would also fail to render obvious the claimed design’s two key features. Thus, even when compared against the proposed combination of Murray and Chiang, each of these differences on its own provides an overall

appearance that is distinct from the overall appearance provided by the patented design. Ground 6 fails for at least these reasons.

D'131 Patent	Murray	Chiang
 Circular concave recess Circular concave recess Compact puck shape FIG. 1	 Flat center portion - No concave recess - Wider and flatter body	 Flat center portion - No concave recess - Wider and flatter body

EX1001, FIG. 1 (annotated); EX1008, FIG. 1 as shown in Pet., 37 (annotated); EX1009, FIG. 1 (annotated).

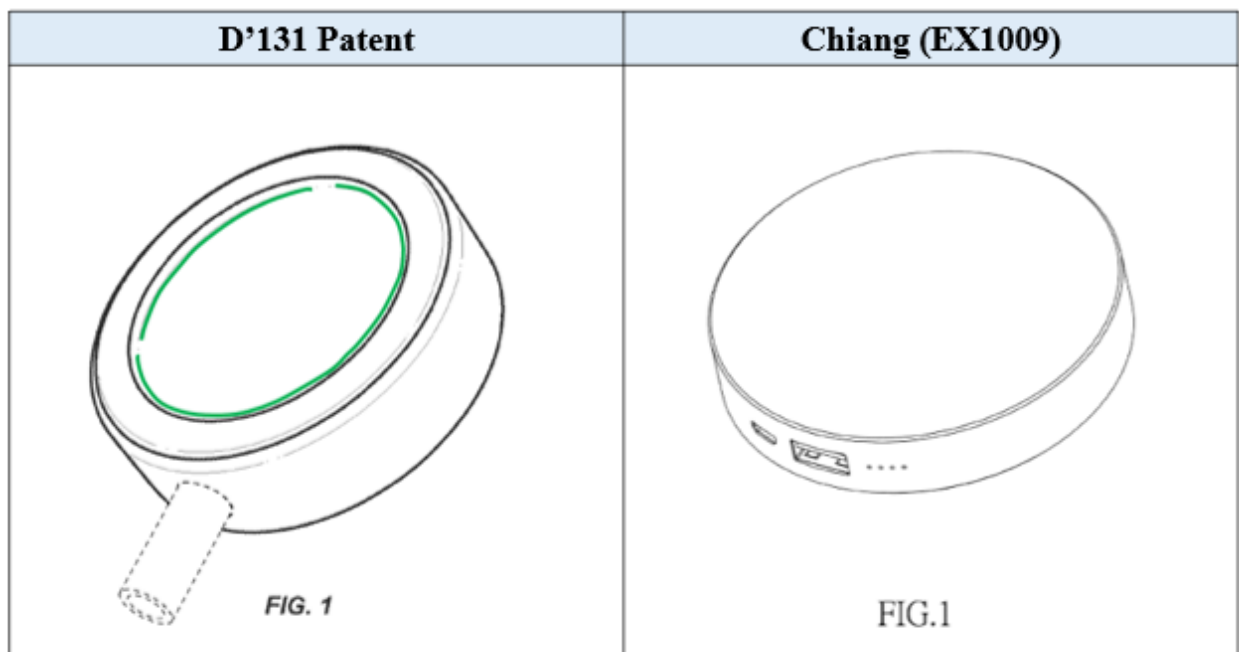
3. Chiang is a Design for a Power Bank Not a Charger

183. As I discussed above, Chiang does not provide art for a “Charger” and therefore cannot be applied as invalidating prior art to the ’131 Patent. For this reason, Ground 7 fails.

G. Ground 7: Chiang Alone Does Not Render the ’131 Patent Obvious

184. Petitioner’s Ground 7 is also deficient because it does not demonstrate that Chiang’s power bank design is a proper primary reference. As an initial matter, Chiang is not a design for a “Charger” and therefore is not a valid prior art reference for the ’131 Patent. And even if considered, similar to all of the other prior art

references (e.g., Lee-616, CN-470, and Murray), Chiang does not have a prominent circular *concave* recess that contributes to a nest or cradle appearance; nor does it have the compact body shape that resembles a compact puck. Both these features are each central to the claimed design’s overall visual appearance and contribute to the substantial differences and overall lack of visual similarity between the ’131 Patent and Chiang. For at least these reasons, Ground 7 fails.



EX1001, FIG. 1 (annotated), EX1009, FIG. 1).

1. Chiang’s Design is for a Power Bank not a Charger

185. As I discussed above, Chiang does not provide art for a “Charger” and therefore cannot be applied as invalidating prior art to the ’131 Patent.

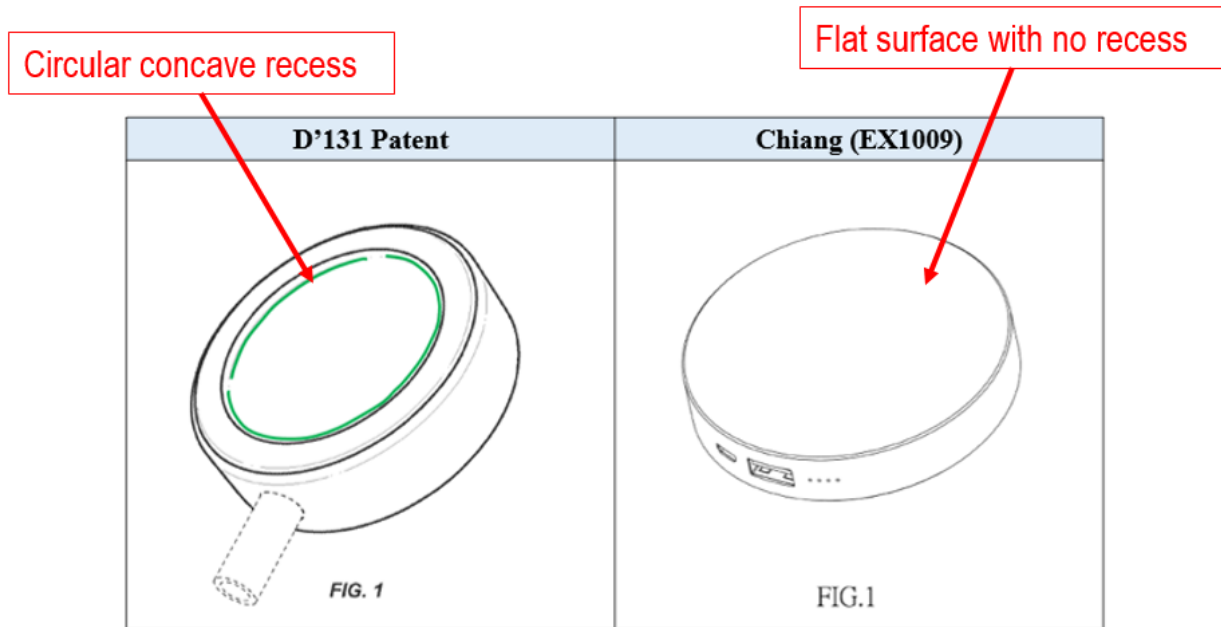
2. Chiang is Not a Proper Primary Reference

186. The Ground 7 is deficient because Chiang is not a proper primary reference. The Petition presents flawed analysis that Chiang’s differences are: “a slightly larger width-to-height ratio”; “chamfered edges instead of rounded edges”; and “a rectangular portion for connecting a cable.” Pet., 97. But these are not the only differences—the Petition does not address many other prominent differences that exist between the claimed design and Chiang that result in meaningfully different overall visual appearances.

(a) Circular Concave Recess

187. Similar to the other prior art references, Chiang fails to show the prominent circular *concave* recess inset from a ring that contributes to the claimed design’s resulting nest or cradle overall appearance. The circular concave recess is a fundamental feature of the claimed design that contributes to its overall appearance in a meaningful way. Similar to the other references, e.g., Lee-616 and CN-470, Chiang lacks this critical feature, and therefore lacks the overall appearance of the claimed design. This ornamental feature of the ’131 Patent represents a major difference. However, Petitioner does not even point to a single feature of Chiang’s power bank design that is a circular contoured recess nor the ring that surrounds the recess. Given at least this major difference, the Petition fails to demonstrate that

Chiang has an appearance that is “basically the same” as the patented design. *See* Pet., 94-95.

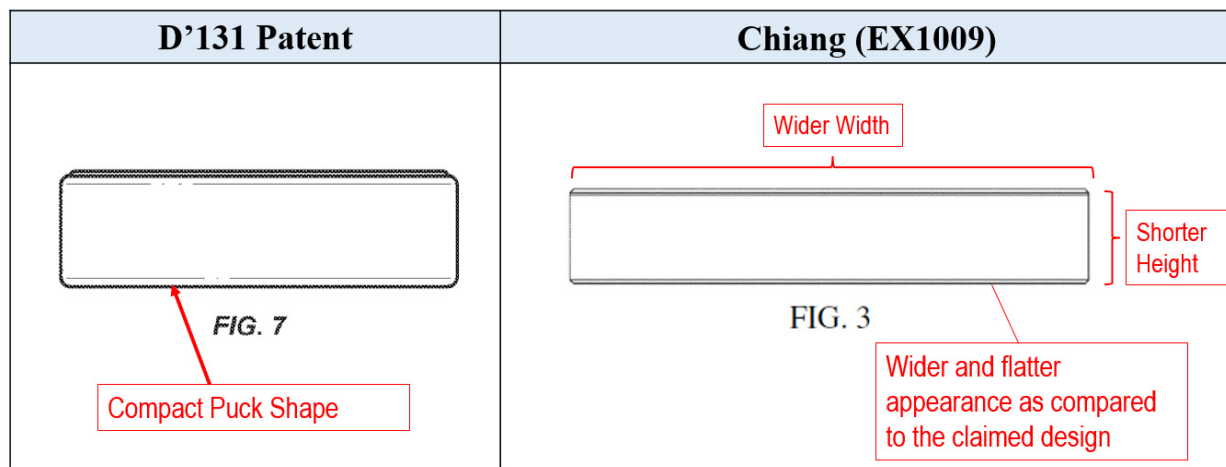


EX1001, FIG. 1 (annotated); EX1009, FIG. 1 (annotated)

188. Furthermore, Masimo’s attempt to dismiss the circular concave recess as a functional component fails because, as discussed above, the claimed design’s circular concave recess is ornamental and therefore not a purely functional feature. Pet., 100 (“The recessed center portion should be disregarded as a functional element of the claimed design.”); 102-103 (“Focusing on the non-functional aspects of the claimed design, Chiang provides the same overall visual appearance as the claimed design.”).

(b) Compact Puck Design with Proportions that are Substantially the Same Ratio of Width-to-Height

189. Unlike the patented design, Chiang does not have a compact puck design. For example, Chiang lacks proportions substantially the same ratio of diameter to height, as depicted in the figures of the '131 Patent. Instead, Chiang's design has an overall appearance that is substantially wider and flatter. For this reason, Chiang's design has a profile that suggests the appearance of a dinner plate or a coaster rather than a compact puck.



EX1001, FIG. 7 (annotated); EX1009, FIG. 3 (annotated)

190. The Petition fails to address this substantial difference other than to allege that it “does not alter the overall visual similarity.” Pet., 97 (“The Chiang cylinder has a slightly larger width-to-height ratio than the claimed design, but that difference, or any difference in the dimensions or proportions of the cylindrical shapes of Chiang

and the claimed design, does not alter the overall visual similarity of these designs.”). In my opinion, the width-to-height ratio contributes to a compact puck appearance and therefore meaningfully contributes to the overall visual appearance of the ’131 patent’s design. And because Chiang lacks this feature, it is not a proper primary reference. Chiang’s overall appearance is therefore not “basically the same” as the claimed design.

(c) A Ring Disposed at the Top Surface

191. Unlike the patented design, Chiang does not have a ring on its top surface (or any of its surfaces). A ring is prominently shown in the figures of the ’131 Patent. But Chiang has no ring and therefore lacks an overall appearance that is “basically the same” as the claimed design.

(d) Compact Puck Design Formed by the Continuous Sidewall

192. Unlike the patented design, Chiang lacks a sidewall that is continuous, unbroken, and uninterrupted by features that distract from the continuity of the sidewall’s design. Instead, Chiang includes two cutouts and a series of four circular features, arranged such that the first cutout, the second cutout, and the series of four circular features are each spaced along the sidewall. The Petition does not address these distinguishing features found in Chiang even though these features shows that

Chiang lacks a sidewall that is continuous, unbroken, and uninterrupted by features that distract from the continuity of the sidewall's design. For this reasons, Chiang does not have the claimed sidewall, which is a feature that contributes to the overall visual appearance of the '131 Patent.

3. The Proposed Modifications to Chiang go Beyond the Design Depicted in the Reference

193. The Petition describes that additional modifications are necessary to provide features of the '131 Patent beyond that depicted by Chiang. *See, e.g.*, Pet., 103 (“modifying Chiang’s top surface into a short, flat ring surrounding a recessed center portion”). These additional modifications are directed to features that are not depicted by Chiang and are not *de minimis*.

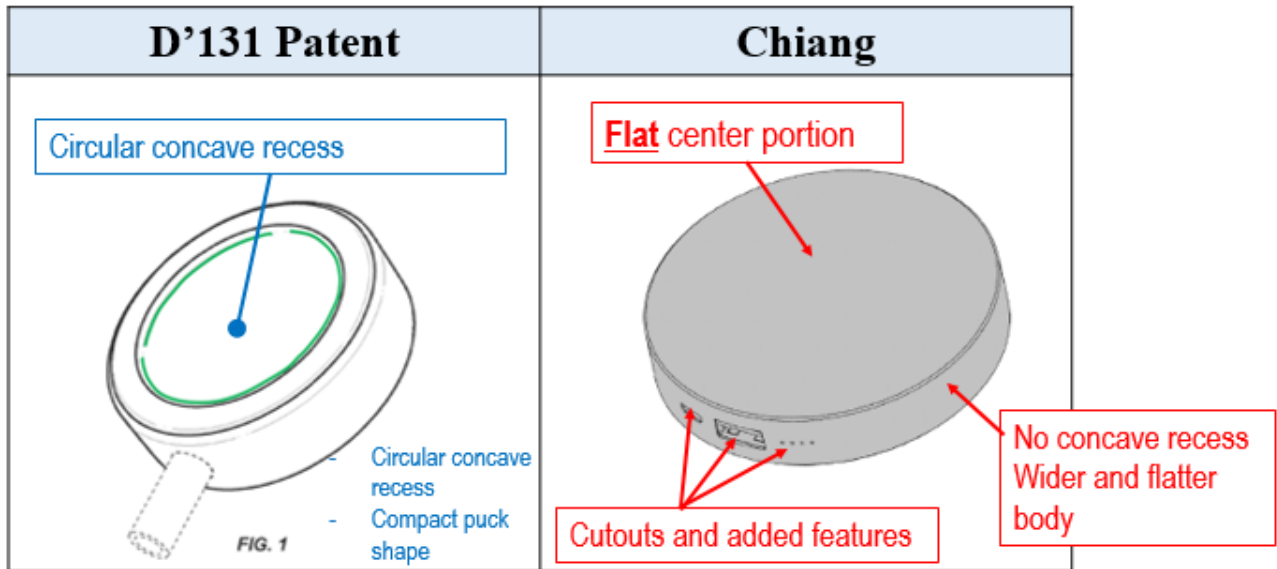
194. For example, the Petition states that “modifying Chiang’s top surface into a short, flat ring surrounding a recessed center portion...would have been a routine modification that was taught by the prior art,” because “Chiang is closely related to numerous prior art cylindrical chargers.” Petition, 103. But the Petition fails to demonstrate that such a change would have been considered trivial by a DOSA, and that a DOSA would have further modified the proposed Chiang combination to achieve the claimed design’s specific appearance. Ground 7, however, does not present a specific prior art reference for its modification and therefore is deficient.

Additionally, as I discussed previously, even if “a short, flat ring and recessed center portion on the charger’s top surface” was used on “numerous prior art cylindrical chargers,” (Petition, 103), the mere knowledge of a shape is insufficient.

4. The Petition Does Not Demonstrate that Modified Chiang Creates the Same Overall Visual Appearance as the Claimed Design

195. Additionally, Petitioner’s proposed modification of Chiang does not create the same overall visual appearance as the ’131 Patent. In particular, the proposed modified Chiang does not convey the distinctive visual impression of a unique design for a “charger” with an overall appearance of a compact puck having a distinctive circular concave recess on the top major face that evokes an elegant nest or cradle appearance. Modified Chiang does not have a circular concave recess in its center portion. Furthermore, modified Chiang does not have a width-to-height ratio that forms a compact puck design. For at least these reasons, Chiang fails to provide an overall visual appearance conveyed by the claimed design. Furthermore, as I discussed above, the sidewall of the modified Chiang does not have a continuous, unbroken, and uninterrupted sidewall. Instead, Chiang’s sidewall includes two cutouts and a series of four circular features. Each of these differences

alone results in an overall appearance that is distinct to the overall appearance provided by the patented design.



EX1001, FIG. 1 (annotated); EX1009, FIG. 1 (annotated)).

196. Since the overall appearance of the charger's patented design differs significantly from the modified Chiang at least due to the claimed design's circular concave recessed portion and its compact puck shape, Ground 7 fails.

VII. CONCLUSION

197. I reserve the right to supplement my opinions to address any information obtained, or positions taken, based on any new information introduced throughout this proceeding.

198. I declare under penalty of perjury that the foregoing is true and accurate to the best of my ability.

APPENDIX A

LANCE RAKE

PROFESSOR DESIGN
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For nearly 50 years, I have been learning, practicing, and teaching industrial design, often at the same time. Honored as a Fulbright Senior Scholar in 2015 and again in 2018, I am currently Professor of Industrial Design at the University of Kansas. I have also taught full-time at Auburn University and Carrington Technical Institute in Auckland, New Zealand. Additionally, I have taught short courses at Konstfackskolan in Stockholm and been a visiting professor at Staffordshire University in Stoke-on-Trent, England, Halmstad University in Sweden, the Royal Melbourne Institute of Technology in Australia, Kathmandu University in Nepal, and the Indian Institute of Technology-Bombay in Mumbai, India. My design research has been supported by private and public grants, and findings presented at national and international design conferences and institutions. For several years I have been using my experience as both teacher and practitioner of design to serve as an expert witness in design patent infringement and product liability cases. I was a signatory to the “133 Distinguished Industrial Design Professionals and Professors” Amicus Brief supporting Apple in its case against Samsung before the Supreme Court.

Working alone or in collaboration with other professionals, I have designed numerous commercial products, consumer products, aircraft and boat interiors, graphics, packaging, and exhibits. I was chosen by the editors at ID Magazine as one of the “Design 50”.

Recently, my research efforts have been focused toward using design to create sustainable craft-based enterprises in rural communities in the US, Africa, Nepal, and India.

EDUCATION

Master of Product Design (renamed Master of Industrial Design), 1982

B.F.A. Industrial Design, 1974

University of Kansas, Lawrence, KS

LICENSURES, CERTIFICATIONS, AND PROFESSIONAL TRAINING

ICSID (International Congress of Societies of Industrial Design) City Move Interdesign workshop, Malmberget, Sweden. One of 40 designers, planners, artists, doctors and students invited to conceive of a new town and to develop a process for relocating cities that could be scaled and exported. 2009

IDSA Continuing Education Certificate, “How to Serve as an Expert Witness in Design Patent Litigation” Taught by Perry J. Saidman and Cooper C. Woodring, 2008

ACADEMIC APPOINTMENTS

University of Kansas, Lawrence, KS

Professor of Design, School of Architecture & Design, 2005 - Present

Associate Professor, School of Fine Arts, 1991 - 2005

Assistant Professor, School of Fine Arts, 1987 – 1990

The Royal Melbourne Institute of Technology, Melbourne, Australia

Visiting Professor, Industrial Design, 2019 – Present

Kathmandu University, Kathmandu, Nepal

Visiting Professor, Mechanical Engineering Department, 2019 – Present

The Indian Institute of Technology-Bombay, Mumbai, India

Honorary Visiting Professor, Bamboo Studio, Industrial Design Center, 2016 – Present

Högskolan i Halmstad (Halmstad University), Halmstad, Sweden

Visiting Professor, Industrial Design, 2016 - Present

The Indian Institute of Technology-Bombay, Mumbai, India

Visiting Professor, Bamboo Studio, Industrial Design Center, 2012

**Carrington Technical Institute (subsequently renamed UNITEC Institute of Technology),
Auckland, New Zealand**

Tutor & Course Supervisor, Product Design, 1985 – 1986

Auburn University, Auburn, AL

Assistant Professor, Industrial Design, 1980 - 1984

ADMINISTRATIVE ASSIGNMENTS

Founder & Acting Director, Center for Design Research, Department of Design, 1994-2005.

Created the CDR to focus our graduate program to realign research efforts in collaboration with regional and national industry partners. I was solely responsible for the effort, establishing an effective design team, securing funding and research projects from industry partners including Learjet and H-P.

Associate Chairperson, Department of Design, 1990-1991

Challenged to improve the Design Department's interaction with industry and to initiate cooperatives, collaboratives, and professional relationships.

UNITEC Institute of Technology, Auckland, New Zealand

Course Supervisor, Design, 1985 – 1986

Essentially the chairperson of Product Design, I was responsible for rewriting the curriculum and reorganizing the area. Our graduating students were remarkably successful- starting their own offices in New Zealand, but also working in major studios in the US, UK and Europe.

HONORS AND AWARDS FOR SCHOLARSHIP

Fulbright Global Scholar Award. “Reimagining the Future of Mobility with a Sustainable Bamboo Bicycle”. I will be working with colleagues in Melbourne Australia and Kathmandu Nepal to design and prototype a bicycle for use by smallholder farmers in rural Nepal. (2019-2020)

Fulbright-Nehru Academic and Professional Excellence Award, Fulbright Senior Scholar Program. Professor Rake's Fulbright research project, “Using Design Thinking to Create Sustainable Craft-Based Enterprise in India”, will investigate strategies that explore how to use design thinking to take traditional craft skills into the future, using innovative design and

technology to improve the income of rural craftspeople and help create transformational change.
(January 2016 - June 2016)

ID Magazine “Design 50”. The editors at ID chose to profile the work of 50 US designers in their January/February 2004 Issue- one from each state. I was honored as the designer chosen to represent Kansas. (2004)

PROFESSIONAL EXPERIENCE

Infusion Design, Bonner Springs, KS
Consultant, 2000 - 2016

The New Deal Playing Card Company, Leawood, KS
Vice President Strategic Product Development, 1995 - 2005

Leon Paul, Ltd, London, England
Design Consultant (sabbatical leave), 2001

Hans Skillius Design, Halmstad, Sweden
Design Consultant (sabbatical leave), 1993

Interface Design Group, Milwaukee, WI
Manager, Industrial Design, 1979 - 1980

Stan Johnson Design, Milwaukee, WI
Design Director, 1978 - 1979

Anacomp (div Bell & Howell Co.), Hartford, WI
Manager, Design Services, 1975 - 1978

Prism, Inc., Racine, WI
Industrial Designer, 1974 – 1975

PUBLICATIONS: BOOKS

Bielenberg, J., Burn, M., & Galle, G. (n.d.). In E. E. Dickinson, *Think Wrong*. 127, 193-200.
ISBN: 9780692693322, 2016 Think Wbook about design innovation, and shares a story about my design process, and how I developed one of my product design ideas.

E. Zijlstra (Ed.), *Booming Bamboo. Materia* (Netherlands).
Images of my design “Woven Bamboo Bicycle” appear in this compilation of contemporary bamboo design.

Schütz, F. (in press). *Innovative Bambus Materialien. arundoobiomaterials*.
Images of my design “Woven Bamboo Bicycle” appear in this compilation of contemporary design featuring bamboo use in composites.

PUBLICATIONS: CONFERENCE PROCEEDINGS

Rosen, B. G., Bergman, M., Skillius, H., Eriksson, L., & Rake, L. (2010). *On Linking Customer Requirements to Surfaces*. In Proceedings of the 13th International Conference on Metrology and Properties of Engineering Surfaces, National Physical Laboratory, London, UK.

Rake, L. (1990). *Industrial Design: Learning to Live Without Modernism*. In Proceedings of the Industrial Designers of America Conference on Design Education, Pasadena, California.

Rake, L. (1989). *Design is the Problem*. In Proceedings of the School of Visual Arts' third annual National Conference on Liberal Arts and the Education of Artists, New York.

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PUBLICATIONS: MULTIMEDIA

Rake, L. G. (1984). *Sketching Techniques for Industrial Designers*. Auburn University: Learning Resource Center.

PUBLICATIONS REFERENCING MY RESEARCH/CREATIVE WORK MAGAZINES & VIDEO

Dickinson, Elizabeth E. "The Pit That Swallowed a City" *Architect*. (October 2010)
Article written about the ICSID 2009 Interdesign workshop held in Malmberget, Sweden. I was quoted several times about the role designers play when we consider how to move populations as the result of natural or ecological events.

Saenz, Yvonne. "Beacon Alley Boards" Vimeo. video. (2014)
Reference to my design work in collaboration with HERObike, Greensboro, AL, 2011

Selden, Ben. "Semester Bike" Vimeo. video. (2013)
Reference to my bicycle design work, and my efforts to leverage design to create social impact in rural Alabama, HERObike, Greensboro, AL, 2011

WEBSITES/BLOGS

Zeitoun, Lea "[Inspired by the Abari bamboo bicycle, Lance Rake designs Barrel Stave bikes](#)" designboom, .February, 2022.

Walia, Nona "[Bamboo-zled!](#)" timesofindia (March 15, 2020)
Reference to my work research developing cargo bicycles out of local resources

Meisenzahl, Mary "[This electric bike was designed in Nepal using local Bamboo to transport tourists and packages- here's how it works](#)" Businessinsider, (June 22, 2020)

Redaksi "[Becak 'Lucu' Kathmandu dari Bambu](#)", majalahcsr (21 Februari, 2020)

Sexty, Jack "[Introducing the Habre Eco Bike: a Nepalese e-cargo machine built from bamboo to beat the climate crisis](#)", ebiketips (February 23, 2020)

Jewell, Nicole “[Bamboo electric bike is designed for Kathmandu locals and tourists](#)”, inhabitat (February 19, 2020)

Myers, Lynne “[habre eco bike is made from local bamboo and is designed to ease pollution in kathmandu](#)”, designboom (February 12, 2020)

Reference to my work research developing Bicycles out of Wine Barrels

Sousa, Marcia “[Designer Cria Bicicleta com Madeira de Barril Usado](#)” CicloVivo, February, 2022.

Hernandez, Daisy “[This Designer Repurposed Wine Barrels to Create a One-of-a-Kind Ride](#)”, Bicycling (March 21, 2019).

Coxworth, Ben, “[The Classy Cooper Bicycle is made from Old Wine Barrels](#)” New Atlas (March 18, 2019).

Pomranz, Mike. “[This Designer Turned a Wine Barrel into a Bicycle](#)”, Food and Wine (March 22, 2019).

King, Tierney, “[Designing Bikes from Old Wine Barrels](#)”. ECN (March 20, 2019).

Reference to my work research developing designs of bicycles, skateboards, and paddleboards made from bamboo or bamboo composites, in collaboration with HERO, a not-for-profit located in rural Greensboro, AL.

Kristen Moses, “[The HEROs of Greensboro, Alabama: How One Nonprofit Is Changing Bike Design and Community Development](#)” Design Good Design (2017)

Harper, Brad. “[Bamboo Bikes Spur Economic Development in a Struggling Alabama County](#)” momentummag.com Momentum. internet. (May 2, 2017)

Underwood, Allison. "Heroes of the Blackbelt" Good Grit...The Character of the South Good Grit (goodgritmag.com). internet. (December 1, 2016)

Reference to my work research developing advanced designs of bicycles using woven bamboo composite tubes. Describes the continued development of a craft-based enterprise, HERObike-a result of a collaboration with HERO, a not-for-profit located in rural Greensboro, AL.

Bauman, Kat. “[Can Braided Bamboo Shift Bike Frame Design?](#)” CORE77 Website CORE 77. internet. (May 30, 2017)

“A Bamboo Road Bike Born from the Collaboration between Lance Rake and HeroBike.” designdiffusion.com. (May 4, 2017)

Lea Zeitoun "[lance rake's HERObike is fitted with woven bamboo tubes](#)" designboom.
(May 2, 2017)

Turner, Troy. "A Boost of Bamboo" Yanko Design Yanko Design. Internet. (May 2015)
This article describes the development of a woven bamboo/composite e-bike.

Alabama Public Radio "[Made in Alabama: A Look at Alabama Makers.](#)" (July 2017)

Market success of the Semester bike and Beacon Alley Skateboard created demand for skilled craftspeople in the region.

Boram, Brian. "Wanted for Hire: Bamboo Bicycle Builders in Hale County, Alabama" Arcade Arcade (arcadenw.org). internet. (Fall 2014)

Reference to my work as a result of designing Beacon Alley Skateboard HERObike, Greensboro, AL, from 2013 - 2014

"A Skateboard To Bring Back Local Manufacturing In The South Is Made From . . . Bamboo?" fastcoexist.com (Fast Company). internet. (2014)

"A Skateboard To Bring Back Local Manufacturing In The South Is Made From . . . Bamboo?" fastcoexist.com (Fast Company). internet. (2014)

"Art Pics: Bamboo Skateboards" Fad: Cool Art & Stuff. internet. (2014)

"Beacon Alley Skateboard: eco-friendly bamboo skateboard by makelab and HERObike" wowozine (Wow Trend Magazine). internet. (2014)

"Beacon Alley Skateboards" CORE 77. internet. (2014)

"Beacon Alley Skateboards" Fancy. internet. (2014)

"Beacon Alley Skateboards" theawesomer.com. internet. (2014)

"Beacon Alley Skateboards Kickstarting in Alabama" Impact Design Hub. internet. (2014)

"Beacon Alley Skateboards' Woven Bamboo Deck" geekalabama.com. internet. (2014)

"Beacon Alley Skateboards' Woven Bamboo Deck" Original Paperbacks. internet. (2014)

"Makelab & HERObike – Beacon Alley Skateboards" hellocoton.fr. internet. (2014)

"Makelab & HERObike – Beacon Alley Skateboards" Whitezine.com. internet. (2014)

"makelab + HERObike weave durable bamboo composite skateboards" designboom.com. internet. (2014)

"Woven Bamboo Composite Skateboards" compositestoday.com. internet. (2014)

"Woven Bamboo Skateboard Muscle" Common Marketplace. internet. (2014)

Television segment that featured the Semester bicycle and the process of making bamboo bikes in rural Alabama.

Oldmixon, Rachele. Aljazeera America. "A fixie made out of oversized grass" TECHKNOW blog. (January/February 2014).

Reference to the Semester Bike design and the development of HERObike-a result of consulting with HERO, a not-for-profit located in rural Greensboro, AL. Details the positive social change that can come from using design thinking to leverage local skills and resources.

Estes, Cary. "Elegantly Designed Bicycle Business" Business Alabama. internet. (September 2014)

"A Bamboo Bike Designed to Lift People from Poverty" Wired.com. internet. (2013)

"Semester Bicycles- Hextube bamboo composite frames made in the rural South" In J. Thomas (Ed.) Bicycle Design.net. internet. (2013)

"Semester Bike designed to create jobs in Alabama" Fast Company. internet. (2013)

"The Semester Bicycle represents a new take on sustainable design, while supporting the local community of Greensboro in Alabama, USA." Design Indaba. internet. (2013)

"The Semester Bicycle: An Environmentally and Socially Responsible Bike" ambikamelville.com. internet. (2013)

"Semester Bike built to drive positive change". Design Boom. (August 2013)

"Semester Bike Project" CORE 77. (2013).

INVITED PRESENTATIONS/LECTURES: INTERNATIONAL

Rake, L. (2023). *Footwear Production- Using Digital Fabrication Tools*. Presentation at Halmstad University, Halmstad, Sweden.

Rake, L. (2020) *The Kathmandu Project*. Fulbright Commission Presentation. Kathmandu, Nepal. (International, Invited)

Rake, L. (2019) *Learning to "Think Wrong"*. Mechathon at Kathmandu University. Dhulikhel, Nepal. (International, Invited)

- Rake, L. (2019, 23 August). *Designs in Tall Grass*. Presentation for Design Students at RMIT, Melbourne, Australia.
- Rake, L. (2016). *Designing in Bamboo*. Presentation at Halmstad University, Halmstad, Sweden.
- Rake, L. (2016, 24 April). *Design Hacks*. Presentation before faculty and student body for The Department of Architecture and Urban Planning, Institute of Engineering, Tribhuvan University, Pulchowk Campus, Kathmandu, Nepal.
- Rake, L. (2016). *7 Words You Should Never Use in Design School*. Presentation before faculty and undergraduate student body at The Industrial Design Center, Indian Institute of Technology, Mumbai, India.
- Rake, L. (2015, July 10). *Symbiotic Relationship Between Design & Engineering*. Med By SCE - Shamoon College of Engineering, Department of Mechanical Engineering, Beer-Sheva, Israel.
- Rake, L. (2015, December 15). *Learning to Make, Making to Learn*. Konstfacksolan, Stockholm, Sweden.
- Rake, L. (2012, October). *Think Wrong*. Presentation before faculty and graduate student body at The Industrial Design Center, Indian Institute of Technology, Mumbai, India.
- Rake, L. (2012, September). *Why Design Matters*. Presentation before faculty and graduate student body at Orchid International School, Nashik, India.
- Rake, L. (2012, April). *What Little I Have Learned*. Presentation, before faculty and design student body at Nelson Mandela Metropolitan University, Port Elizabeth, South Africa.
- Rake, L. (2008). *Unapologetically American*. Presentation, SVID Designdagen conference at Halmstad University, Halmstad, Sweden.
- Rake, L. (2007). *Industrial Design, Learning to Live Without Modernism*. Paper, for Industrial Design and Innovation Engineering graduate students and faculty at Halmstad University, Halmstad, Sweden.
- Rake, L. (2007). *My Life Aboard the Titanic*. Presentation, Konstfackskolan, the national art & design school, Stockholm, Sweden.
Attended by Industrial Design faculty, undergraduate, and graduate students.
- Rake, L. (2007). *Towards Reality in Industrial Design*. Presentation, Institute for Design, Umeå University, Umeå, Sweden.
Attended by faculty and graduate students Industrial, Transportation, and Interaction Design.
- Rake, L. (2005). *The Future of Graduate Design Education*. Presentation for “Designdagen”- Swedish Design Day, SVID, Swedish Society of Industrial Design, Halmstad, Sweden.
2005 has been designated as “Design Year”.

Rake, L. (2004). *Industrial Design Education and Practice in a Multidisciplinary and International Context*. Presentation for administrators, faculty, and students, Halmstad University, Halmstad, Sweden.

Rake, L. (1986). Panelist, National Art and Design Education Symposium, Auckland, New Zealand.

Rake, L. (1985). *Experiential Learning in Industrial Design Education*. Presentation, New Zealand Society of Industrial Designers regional meeting, Auckland, New Zealand.

INVITED PRESENTATIONS/LECTURES: NATIONAL

Rake, L. G., Durkin, T.-G. G., & Gajewski, D. A. (2022, February 22). *Navigating Functionality in Design Patent Prosecution and Litigation*. Strafford Publishing webinar.

Rake, L. G., Durkin, T.-G. G., & Gajewski, D. A. (2015, December 8). *Navigating Functionality in Design Patent Prosecution and Litigation*. Strafford Publishing webinar.

Rake, L. (2003). *Ergonomics: A Commonsense Approach for Industrial Designers*. Presentation, 9th Annual National Ergonomics Conference and Exposition, Las Vegas.

Rake, L. (1994). *The Beauty of Chaos; the Chaos of Beauty*. Presentation, Symposium Design Thinking- Expressive Solutions, Helsinki, Finland.

Rake, L. (1991). *Toward Reality in Industrial Design*. Presentation, Product Semantics and Visual Semiotics in Design Conference, Helsinki, Finland.

Rake, L. (1990). *Industrial Design: Learning to Live Without Modernism*. Presentation, Industrial Designers of America Conference on Design Education, Pasadena, CA.
Published in the proceedings.

Rake, L. (1989). *Design is the Problem*. Presentation, School of Visual Arts' third annual National Conference on Liberal Arts and the Education of Artists, New York.
Published in the proceedings.

Rake, L. (1989). *Taking Another Look at Design Education*. Presentation, Industrial Designers of America Conference on Design Education, Minneapolis.
Published in the proceedings.

GRANTS/AWARDS: EXTERNAL

Fulbright IIE Centennial Fellowship, *Cargo Bikes to Empower Smallholder Farmers in Rural Nepal*, (2021)

Fulbright IIE Centennial Fellowship, *Designing an Education and Training Center for the Indigenous Chepang of Nepal*, (2020)

Fulbright Senior Scholar Program, Fulbright Global Scholar Award. *"Reimagining the Future of Mobility with a Sustainable Bamboo Bicycle"*, is a project that began with a research and design phase in Melbourne, Australia and moves to a prototype and testing phase in Kathmandu, Nepal.

Designed a bamboo cargo bike to improve the congestion and pollution in urban Kathmandu and hopefully leads to new employment opportunities for rural craftspeople in Nepal. (July 2019 – January, 2020)

Fulbright Senior Scholar Program, Fulbright-Nehru Academic and Professional Excellence Award. “*Using Design Thinking to Create Sustainable Craft-Based Enterprise in India*”, investigated strategies that explore how to use design thinking to take traditional craft skills into the future, using innovative design and technology to improve the income of rural craftspeople and help create transformational change. (January 2016 - June 2016)

Rake, L. *Adventure Travel Luggage*. Bass Pro Shop, Springfield, MO (2006).

Rake, L. *Exploring Innovations in Fan Design*. Hunter Fans, Memphis, TN (2006).

Rake, L. *New Product Ideas for Family Camping Tents*. Wenzel, St. Louis, MO (2005).

Rake, L. *Milner Aircar*. DAR, Lawrence, KS (2004).

Rake, L. *Short-range Wireless Interconnection of Electric Devices*, Bluetooth, Kansas City, MO (2004).

Rake, L. *Portable Outdoor Exhibition Space*. Big Dog Motorcycles, Wichita, KS (2003).

Rake, L. *New Product Ideas for the Scrapbook Market*. Cardinal Brands, St. Louis, MO (2002).

Rake, L. *Back to School Product Design. Investigation, Analysis, and Design*. Cardinal Brands, St. Louis, MO (2001 - 2002).

Rake, L. *New Product Opportunities in the Recreational Boat Industry*. Investigation, Analysis, and Design. Infusion Design, Bonner Springs, KS (2001 - 2002).

Rake, L. *Recreational Vehicle Design for a New Market Segment. Investigation, Analysis, and Design*. MountainHigh Coachworks, Ontario, CA (1999 - 2000).

Rake, L., & Geil, D. M. *Fencing Shoe Design*. United States Olympic Committee (1998). Consultant with Dr. Geil.

Rake, L. *Design of a Closed System Bearing Oiler*. Trico Manufacturing, Pewaukee, WI (1995 - 1998).

Johnson, J., Rake, L., *Design of Motor Assist Standing Wheelchairs*. Small Business Innovation Research Program Grant. FENA DESIGN, St. Cloud, MN. (1995 - 1998).

Nagengast, D., & Rake, L. *DIY In Field Refrigeration for Small Organic Farms* North Central Region Sustainable Agriculture Research and Education Program. U.S. Department of Agriculture (1995).

Rake, L. *Laptop Computer Design*. Compaq Computers, Houston, TX (1994).

Rake, L. *Interior Concepts, 31-A*. Learjet, Wichita, KS (1994).

Rake, L. *3D Modeling Hardware & Software, Equipment Grant*. Intergraph Corporation, USA, and Intergraph Sverige, AB (1993).

Rake, L. *Using Traditional Materials and New Technologies in an Alternative Design Strategy*. SOR, Inc. Olathe, KS (1988).

GRANTS/AWARDS: INTERNAL

Sabbatical (waitlisted). Rake, L. “*Making Custom Footwear through Global FabLab Network*”(2021) Halmstad, Sweden.

General Research Fund. Gore, N. & Rake, L. “*Electrifying the Dotte Mobile Grocer Demonstration Kitchen*.” University of Kansas (2019)

Faculty Support Grant Fund from the Office of Study Abroad. Herstowski, A. & Rake, L. *Mapping Study Abroad to the Major*, (2016). Connecting with Study Abroad partners in Finland, Sweden, and Denmark.

Sabbatical. Mumbai, India. Conducted research at the Bamboo Studio, Industrial Design Center, Indian Institute of Technology-Bombay. (2012)

Hallmark Faculty Enhancement Fund. Rake, L. *A Pilot Project to Develop and Implement the Alodia Afrika Design Office*. University of Kansas (2011). Using Design Thinking to open new product and market possibilities for a woman’s textile co-op in Hamburg, South Africa.

Transportation Research Institute. Rake, L. *Driving Without Distraction: We Have an App for That*, The University of Kansas (2010).

Rake, L. *Design of the Next Generation General Aviation Aircraft Interior*. University of Kansas (2004).

Sabbatical. Stratford-upon-Avon, England. Conducted research at the Leon Paul office in London, England to design and test fencing equipment including weapons, scoring equipment, and footwear. (2001)

Research and Development Fund. Rake, L., & Ewing, D. M. Proposal Development for NASA’s University Earth System Science (UnESS) Program. *Mapping Greenland Ice*., the University of Kansas (2000 - 2001).

Rake, L. *Design of High- Performance Titanium Sabre using 3D Solid Modeling, Testing, and Evaluation Technologies*. University of Kansas (1999).

Sabbatical. Halmstad, Sweden. Professional design practice in the office of Hans Skillious, Halmstad, Sweden. (1993)

Rake, L. *The Electronic Mock-up as a Conceptual Tool for Industrial Designers*. University of Kansas (1993)

Rake, L. *Product Development Using an Alternative Design Strategy*. University of Kansas (1989).

Rake, L. G., & Taylor, D. J. B. *The Efficacy of Training on the Development of Creative Thinking Ability*. Research Grant-In-Aid, Auburn University (1984).

SELECT DESIGN WORK IN WOOD & BAMBOO

Rake, L. *Travel Guitalele*, (December, 2022)

Using Virtual Reality and Digital Fabrication technologies, I designed and built a headless portable travel guitar. The entire instrument was 4" X 5" X 18". The body was designed in Gravity Sketch and machined in maple on a CNC bed router. Currently being field tested. (December, 2022)

Rake, L. *Electric Whiskey Barrel Stave Bicycle*, (December, 2021)

Following the success of the Whiskey Barrel Stave Bicycle from 2019, I designed and built a new version with a Bosch mid-drive electric motor, disk brakes, NuVinci CVT, and custom frame bag. It will be shown at the North American Handmade Bicycle Show in Denver, September, 2022.

Rake, L. & Adhikary, N. *Habre Eco Bike*, (May 2016 – September, 2017).

Designed in collaboration with Nripal Adhikari, the habre eco bike is a response to issues of urban congestion and pollution that plague the city of Kathmandu, Nepal. It is made by local artisans using regional bamboo and provides a green alternative to gas-guzzling transport vehicles, reducing air pollutants and therefore improving the health of citizens.

Rake, L. Mass Production Bamboo Bicycle for Bikeshare System, IIT-Bombay Campus, Mumbai, India, (February 2016 – April, 2017). This bike was designed to be easily, quickly, and reliably manufactured in large numbers. It was also designed to be easily repaired and adjusted in the field.

Rake, L. *Whiskey Barrel Stave Bicycle*, (June, 2019)

After executives at Buffalo Trace Distillery in Frankfort, KY saw images of the Wine Barrel Stave Bicycle, they asked me to prototype a bicycle made from whiskey Barrel Staves. It is currently being considered as a fleet bike for tours of their Canadian distillery.

Rake, L. *Wine Barrel Stave Bicycle*, (December, 2018- March, 2019)

Presented at the 2019 North American Handmade Bicycle Show. It is currently being considered as a fleet bike for wine tours in Napa, California.

Rake, L. & Adhikary, N. *Abari Bamboo Bike*, (May 2016 – September, 2017).

Design and development of a new generation bamboo bicycle initially designed and prototyped at the Abari architecture studio in Kathmandu, Nepal in April, 2016 as part of my Fulbright research. Rake, L. Mass Production Bamboo Bicycle for Bikeshare System, IIT-Bombay Campus, Mumbai, India, (February 2016 – April, 2017). This bike was designed to be easily, quickly, and reliably manufactured in large numbers. It was also designed to be easily repaired and adjusted in the field.

Rake, L. *Sidekick*, HERObike, Greensboro, AL. (September, 2015- February, 2016)

I designed the Sidekick Balance Bike for HERO, a not-for-profit located in Greensboro, AL, as a way to create quality craft-based jobs. Most of my design work for HERO explores the use of

bamboo- a local resource in rural Alabama. The Sidekick is designed for easy fabrication in the Greensboro workshop. The Sidekick was further developed and prototyped in India at the Industrial Design Center at the Indian Institute of Technology-Bombay in Mumbai in spring, 2016 as part of my Fulbright research.

Rake, L. *Sidekick Senior*, IIT-B, IDC, Mumbai, India (January, 2016- May, 2016)

I designed the Sidekick Senior at the Industrial Design Center at the Indian Institute of Technology-Bombay in Mumbai in spring, 2016 as part of my Fulbright research. I leveraged the simplicity of design of the Sidekick Balance bike to create a pedal-powered version with 20" wheels.

Rake, L. *Inframe Storage System*, IIT-B, IDC, Mumbai, India (January 2016- May, 2016) The Inframe Storage System is a woven bamboo basket designed to ride inside the main triangle structure of a commuter-style bicycle. It was designed at the Industrial Design Center at the Indian Institute of Technology-Bombay in Mumbai in spring, 2016 to create job opportunities for rural and urban bamboo artisans in India as part of my Fulbright research.

Rake, L. *Whalebone Stand Up Paddleboard*, HERObike, Greensboro, AL. (June 2014 - July 2015)

I designed the Whalebone Stand Up Paddleboard for HERO, a not-for-profit located in Greensboro, AL, as a way to create quality craft-based jobs. The Whalebone is an innovative skin-on-frame design that uses an inexpensive but strong structure made of bamboo, covered with inexpensive sign vinyl. Whalebone was designed to be made in weekend workshops in the Greensboro workshop.

Rake, L. *Woven Tube Road Bike*, HERObike, Greensboro, Alabama. (August 2012 - February 2013). I designed the Woven Tube Bike for HERO, a not-for-profit located in Greensboro, Alabama, as a way to create quality craft-based jobs. Most of my design work for HERO explores the use of bamboo- a local resource in rural Alabama. The Woven Tube bike is an innovative bamboo/carbon fiber composite that is extremely lightweight. The Woven Tube Road Bike was shown in the North American Handmade Bicycle Show in Louisville, KY in March 2014.

Rake, L. *Bamboost*, HERObike, Greensboro, Alabama. (August 2012 - February 2013). I designed the Bamboost e-Bike for HERO, a not-for-profit located in Greensboro, Alabama, as a way to create quality craft-based jobs. Bamboost is an innovative bamboo/carbon fiber composite bike that utilized the same aviation-inspired sandwich composite technology developed for the Beacon Alley Skateboards. It was shown in the North American Handmade Bicycle Show in Louisville, KY in March 2015.

Rake, L. *Beacon Alley Skateboards*, HERObike, Greensboro, Alabama. (January 2013 - December 2014) I designed the Beacon Alley Skateboard for HERO, a not-for-profit located in Greensboro, Alabama, as a way to create quality craft-based jobs. The skateboard is a bamboo composite design that is a fusion of handcraft and aviation-inspired high tech sandwich composite materials and techniques.

Rake, L. *Flatpack Bicycle*, HERObike, Greensboro, Alabama. (August 2012 - February 2013). I designed the Flatpack Bike for HERO, a not-for-profit located in Greensboro, Alabama, as a way to create quality craft-based jobs. Most of my design work for HERO explores the use of bamboo- a local resource in rural Alabama. The Flatpack is a bamboo composite design that also uses

waterjet cut aluminum panels. The entire bicycle arrives in a small box and can be easily assembled with minimal tools. The Flatpack was shown in the North American Handmade Bicycle Show in Charlotte, NC in March 2014.

Rake, L. *Semester Bicycles*, HERObike, Greensboro, Alabama. (January 2012 - February 2014)
I designed the Semester Bike for HERO, a not-for-profit located in Greensboro, Alabama, as a way to create quality craft-based jobs. Most of my design work for HERO explores the use of bamboo- a local resource in rural Alabama. The Semester is a bamboo composite design. The Flatpack was shown in the North American Handmade Bicycle Show in Denver in February, 2013.

EXHIBITIONS: DESIGN

“Sustainable Revolution” Architecture Biennale 2021, Zuecca Project Space, Venice, Italy, September, 2021 (on hold because of Covid-19)

“Wine Barrel Stave Bike” introduced. North American Handmade Bicycle Show, Sacramento, CA, March, 2019.

“Keep Moving: Shifting Gears!” Design Museum of Chicago. Two of my bamboo bikes featured in this show. November 2018- March, 2019.

Dharavi bikeshare bicycle design introduced. North American Handmade Bicycle Show in Hartford, CT. in March 2018.

Semester bicycle design featured in *Engaged: Campus and Community Scholars Working Together for the Public Good*—an exhibit to recognize and celebrate community engagement and engaged scholarship at the University of Kansas. 2017

Bamboost e-bike design introduced. North American Handmade Bicycle Show in Louisville, KY in March 2015.

Woven Tube bicycle design introduced. North American Handmade Bicycle Show. Charlotte, NC in March 2014.

Semester & Flatpack bicycle designs introduced. North American Handmade Bicycle Show in Denver, CO in February 2013.

PERMANENT COLLECTIONS

Rake, L. *New Deal Playing Cards*, Stuart and Marilyn R. Kaplan Playing Card Collection, the most comprehensive collection in the United States (1998) Designed in 1995.

Rake, L. *New Deal Playing Cards*, Deutsches Spielkarten-Museum, permanent collection, Leinfelden-Echterdingen, Germany (1998) Designed in 1995.

PATENTS

Professor Rake has been awarded 10 patents, 8 of which are still active.

Rake, L., Patent. "Process for Making Braided Bamboo Laminated Composite Tubing US Provisional Patent" (abandoned)

Rake, L., Patent. "Process for Making Structural Tubing with Bamboo and Reinforcing Fiber Material US Provisional Patent" (abandoned)

Rake, L., Patent. "Power System", US Utility Patent US20090152944. (Approved: 2009).

Rake, L., Patent. "Extension for a Golf Club Shaft and Method of Installing the Same", US 20080081708. (Approved: 2008).

Rake, L., Patent. "Fishing Bobber", US Utility Patent Pending. (Approved: 2007).

Rake, L., Patent. "Footstool/Ladder", US Utility Patent Pending. (Approved: 2007).

Rake, L., Patent. "Temperature Gauge/ Barometer", US Design Patent D 538694. (application: 2005, Approved: 2006).

Rake, L., Paul, B., Patent. "Protective Fencing Mask", US 20030070202; US 20020157167; US 6,701,536 B2; US 6,820,286 B2. (Approved: 2003).

Rake, L., Patent. "Playing Cards with Gripping Surface", US 5,490,676. (Approved: 1998).

Rake, L., Patent. "Guitar Case", D 265146. (Approved: 1982).

EXPERT WITNESS: DESIGN

Professor Rake has served as an expert witness on numerous patent infringement/validity cases. Case length varies from months to years. The responsibilities include researching, writing reports, rebutting reports, depositions and when needed court testimony.

Thompson Coburn LLP, Design Expert, St. Louis, MO (2021-Present)
JPT Group, LLC v. Tapestry, Inc.

Winston & Strawn LLP, Design Expert, Los Angeles, CA
Cambria Company LLC v. Hirsch Glass Corp.

Glacier Law, LLP, Design Expert, New York, NY (2021-2022)
Hangzhaou Chic Intelligent Technology Co.

Dorsey & Whitney, LLP, Design Expert, Minneapolis, MN (2021-Present).
Chanel, Inc. v. Molo Design, LTD

Carsten & Calhoon, LLP, Design Expert, Dallas, TX (2021-Present).
Torvent LLC v. WalMart; Home Depot; Homelite Consumer Products; et al

Arnold & Porter, Design Expert, Los Angeles, CA (2021-Present).
Valentino S.p.A. v. Mario Valentino S.p.A.

Woodard, Emhardt, Moriarity, McNett & Henry, LLP, Design Expert, Indianapolis, IN (2020-Present). Representing Knauf Insulation v. Johns Manville

Godfrey & Kahn, S.C., Design Expert, Madison, WI (2021).
Expedite International v. Edmonds Outdoors, LLC

Whitaker Chalk Swindle & Schwartz PLLC, Design Expert, Representing Delta T v. Dan's Fan City (2021)

Marchant & Gould, Design Expert (2021)
Liaigre v. California Furniture Collection

Lewis Roca Rothgerber Christie, LLP, Design Expert, Glendale, CA (2021-Present).
Caravan Canopy v. WalMart

Fish & Richardson P.C., Design Expert, Austin, TX (2018-2019).
Representing Kingston v. PAVO

Sterne, Kessler, Goldstein & Fox, Expert Witness, Washington, DC (2018-2019).
Representing Juul in an ITC matter.

Morgan Lewis, Design Expert, Palo Alto, CA (2018-2019)
Representing Gavrieli v. Soto Massini

Ice Miller, LLP, Design Expert, Philadelphia, PA. (2018).
Representing Regalo International v. Summer Infant

Fish & Richardson P.C., Design Expert, Dallas, TX. (2018).
Representing Amazon v. Jumpsport, Inc,

Thompson Coburn, Design Expert, St. Louis, MO. (2017).
Representing Wesfield Outdoors v. Haingaertner and Walsh

Kirkland & Ellis, Design Expert, Chicago, IL (2018).
Representing The Chamberland Group v. Techtronic Industries

Lewis Roca Rothgerber Christie, LLP, Design Expert, Glendale, CA (2018).
Representing Blumenthal Distributing v. Herman Miller

Thompson Coburn, Design Expert, St. Louis, MO. (2017).
Representing Post v. General Mills

Perkins Coie, Design Expert, Seattle, WA (Sept 2016).
Representing Amazon v. Daimler AG

Woodard, Emhardt, Moriarty, McNett & Henry, LLP, Design Expert, Indianapolis, IN (Winter 2016 - Present). Representing Knauf Insulation before USPTO

Banner & Witcoff, Design Expert, Chicago and Portland, OR (Winter 2015).
Representing Nike v. Sketchers

Blakely Law Group, Design Expert, Manhattan Beach, CA (2016).
Representing Deckers/ Uggs Australia in a design patent dispute

Sterne, Kessler, Goldstein & Fox, Expert Witness Testimony, New York, NY (2015). Design
Expert for Reexamination of Apple iPhone Design Patents

Orrick, Herrington & Sutcliffe LLP, Design Expert, Menlo Park, CA (2016). Represented Belkin
in a patent infringement case versus Acrox

Alston & Bird, LLP, Expert Witness Testimony, Palo Alto, CA (2014). Expert witness for light
reflectors design patent case before the ITC

Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, Expert Witness Testimony, Washington
DC (2014). Design Declaration before the Appeal Board, USPTO (housewares)
Kelly IP, LLP, Expert Witness Testimony, Washington DC (2013 - 2014). Design Declaration
before the Appeal Board, USPTO (electronic cables)

Winston & Strawn, LLP, Expert Witness Testimony, Los Angeles, CA (2013 - 2015). Design
Analysis for utility patent infringement case (laptop and tablet accessories)

Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, Expert Witness Testimony, Washington
DC (2013). Design Analysis for design patent infringement case (cameras).

Oblon, Spivak, McClelland, Maier & Neustadt, L.L.P., Expert Witness Testimony, Alexandria,
VA (2013). Design Analysis for design patent infringement case (bedroom slippers).

Amster Rothstein & Ebenstein LLP, Expert Witness Testimony, New York, NY (2012). Design
Analysis for design patent infringement case (bedroom slippers).

Miller Canfield, Expert Witness Testimony, Chicago, IL (2011 - 2012). Design Analysis, Report
for a design patent infringement case (bedroom slippers).

White & case, LLP., Expert Witness Testimony, New York, NY (2011 - 2012). Design Analysis,
Report, and Deposition Testimony for USB Drive design patent case before the ITC.

Baker Botts L.L.P., Expert Witness Testimony, Houston, TX (2010 - 2011). Design Analysis,
Report, for a design patent infringement case (juice bottle caps).

Polsinelli Shughart, P.C., Expert Witness Testimony, St. Louis, MO (2010 - 2011). Design
Analysis, Report, for a design patent infringement case (refrigerated floral cases).

Husch Blackwell Sanders LLP, Expert Witness Testimony, St. Louis, MO (2009). Color Analysis, for a trade dress case.

Wooten, Honeywell, Kimbrough, Gibson, Doherty and Normand, P.A., Expert Witness Testimony, Orlando, FL (2007 - 2009) Design Analysis, Testing, for a product liability case (consumer seating).

Allen & Vellone, P.C., Expert Witness Testimony, Denver, CO (2008). Design Analysis, for a design patent infringement case (footwear).

Allen, Dyer, Doppelt, Mibrath & Gilchrist, P.A., Expert Witness Testimony, Orlando, FL (2008). Design Analysis, for a design patent infringement case (apparel).

Holbrook Law Office, Expert Witness Testimony, Orlando, FL (2000 - 2001). Design Analysis, Testing, for a product liability case (contract seating).

Rausch Hendicks German May, Expert Witness Testimony, Kansas City, MO (1999 - 2000). Defense expert for design patent infringement case.

Skepnek & Maddox, Expert Witness Testimony, Lawrence, KS (1998). Center for Design Research, The University of Kansas. Created forensic computer animation for a medical malpractice case.

Purdy & Flynn, Expert Witness Testimony, Fort Lauderdale, FL (1994 - 1996). Design Investigation, Analysis, Modeling for a product liability case.

Holbrook & Hardy, Expert Witness Testimony, Orlando, FL (1992 - 1994). Design Investigation, Analysis, Modeling for a product liability case.

PROFESSIONAL DESIGN PROJECTS/CLIENT LIST

For nearly 50 years, Professor Rake has worked as a professional designer; working in corporate design studios, consulting offices, or as a freelance designer on a very broad range of projects. This includes the design of motorcycles, air circulators, aircraft interiors, micrographic readers, orthopedic traction systems, knives, space heaters, furniture, power tools, retail fixtures, electronic controls, playing cards, games, work environments, cranes, lawn and garden tractor, trade show exhibits, string trimmers, snowmobiles, VHS cassettes, medical products, audio amplifiers, industrial electrical control housings, bags, back to school products, electrical substation enclosures, excavator cabs, bird houses and feeders, fence posts, tool cabinets, boat interiors, motor coach interiors, and plumbing fixtures.

Abari, Kathmandu, Nepal
Bicycle, e-Cargo Bike Design

Armani/ Embraer, São José dos Campos, São Paulo, Brazil
Aircraft Interior Design.

ADS, Huntsville, AL
Branding, Research and Design.

Adams Aircraft, Mojave, CA
Aircraft Interior Design.

Aerion, Dallas, TX
Supersonic Business Jet interior design

Aeroflex, Wichita, KS
Product Design

Aero Nimbus, Malaysia
Asian Airshow Exhibition Design.

Aladdin Industries, Nashville, TN
Camping Products.

Alberta Aerospace, Alberta, Canada
Design Proposal, Aircraft Interior Design.

Alfa-Laval, AB, Stockholm, Sweden
Agricultural Product Design.

Auburn University School of Pharmacy, Auburn, AL
Pharmacy Patient Consultation Booth.

Auckland University School of Medicine, Auckland, NZ
Asthma Inhaler.

Baker Electronics, Miami, FL
Aircraft IFE Switches.

Beauty Brands, Kansas City, MO
Interior/ Fixture Design.

Bell Helicopter, Dallas, TX
Helicopter Shuttle Interior

Bell & Howell, Lincolnwood, IL
Communications and Office Product Design.

Bergström, Halmstad, Sweden
Promotional Products Design.

Birkenstock, USA, Novato, CA
Store Fixture Design.

Bolens, Port Washington, WI
Lawn Tractor Design, Product Graphics.

Bombardier, Montreal, Canada
Business Jet Interior Design.

Bose Research, Boston, MA
Store Fixture Design.

Brian Russell Designs, Auckland, NZ
Highchair Design.

Briggs & Stratton, Milwaukee, WI
Exhibit Design.

Bruning International, Itasca, IL
Office Product Design, Product Graphic Design.

Bucyrus-Erie, Milwaukee, WI
Heavy Equipment Design, Product Graphic Design.

Bushnell, Lenexa, KS
Night Vision Monocular Design.

Cardinal Brands, St. Louis, MO
Office Products, Softgoods Design

Caterpillar, Peoria, IL
Footwear Display System.

Chicagofest, Chicago, IL
Festival Graphic Design.

Collins Communications Technologies, Milwaukee, WI
Branding, Graphic Design.

Coleman, Wichita, KS
Product Design

Crabtree Music, Milwaukee, WI
Graphic Design.

Cramer, Inc, Kansas City, MO
Office Furniture Design.

Cubcrafters, Yakima, WA
Aircraft Interior Design.

Cutler-Hammer, Milwaukee, WI
Exhibit Design.

Dolpo, Kathmandu, Nepal
Softgoods Design

Drott Manufacturing, Wausau, WI
Heavy Equipment Design, Product Graphic Design.

Eagle Creek, San Diego, CA
Store Fixture Design.

Embraer, São Jose, Brazil
Aircraft Interior Design.

Fairchild-Dornier, Oberpfaffenhofen, Germany
Paint schemes, Product Graphic Design.

Faultless, Kansas City, MO.
Garden Tool Design.

Filer & Stowell, Milwaukee, WI
Heavy Equipment Design, Product Graphic Design.

Fischer & Paykel, Auckland, NZ
Control Design.

Furminator, Blacksburg, VA
Product Design

Företagsutvecklarna, Växjö, Sweden
Gas Candle Design.

Galaxy Aerospace, Dallas, TX
Aircraft Interior Design.

Gametime, Inc., Fort Payne, AL
Outdoor Furniture Design.

Global Express, Montreal, Canada
Regional Jet Interior Design.

Grahm Transmissions, Milwaukee, WI
Product Graphic Design.

Harley-Davidson, Milwaukee, WI
Motorcycle Design, Model Building.

Hawker/Beechcraft, Wichita, KS
Aircraft Interior Design.

Helio, Bristol, TN
Aircraft Interior Design Proposal

HERO, Greensboro, AL
Bicycle Design, Furniture Design, Footwear Design

Hustler/ Excel, Hesston, KS
Commercial Lawnmower Design, Side-by-Side Vehicle Design

Huhtamaki, Desoto, KS
Commercial Product Design.

ICOR, AB, Stockholm, Sweden
Medical Product Design.

IKEA, Stockholm, Sweden
Clothes Hanger Design, Recycling Bin Design.

J.I. Case Company, Racine, WI
Heavy Equipment Design, Product Graphics.

Jockey International, Kenosha, WI
Exhibit Design, Store Fixture Design.

Kohler, Kohler, WI
Exhibit Design.

Larson/Glastron, Little Falls, MN
Leisure Boat Design.

Learjet div of Bombardier, Wichita, KS
Corporate Aviation Interior Design.

Leon Paul, London, England
Fencing Mask, Footwear, Scoring Box Design.

Marathon Electric, Wausau, WI
Store Fixture Design.

Martin Industries, Florence, AL
Electric Space Heater Design.

Matthews Heater Co., Albertville, AL
Electric Space Heater Design.

Micro Design, Hartford, WI
Product Design, Corporate Identity, Strategic Planning.

Micron Corporation, Iron Ridge, WI
Product Design, Corporate Identity, Strategic Planning.

Minder Systems, Auckland, NZ
Electronic Control Design.

Nauter's Swan, Pietarsaari, Finland
Yacht Design.

New Deal Playing Cards, Leawood, KS
Product Design, Corporate Identity, Strategic Planning.

Newell Motorcoach, Miami, OK
Motorcoach Design, Product Planning.

Pantone, New York, NY
Bag, CD Case, Softgoods, Notebook Design

Perceptive Software, Kansas City, KS
Trade Show Design.

Perm-a-Store, Wichita, KS
Product Design.

Pivot, International, Kansas City, Mo.
Voting Booth Design.

Polaris, Roseau, MN
Snowmobile Design, Product Graphic Design.

Poulan, Shreveport, LA
String Trimmer Design, Lawnmower Design.

Raaco, Copenhagen, Denmark
Plastic Toolbox Design.

Raetheon, Wichita, KS
Aircraft Interior Design.

Ranger Boats, Flippin, AR
Boat Design

Rayovac, Madison, WI
Product Design.

Rubbermaid, Huntersville, NC
Product Design.

Schroeder & Tremayne, St. Louis, MO
Product Design- Brushes, Cleaning Products

S.O.R. Inc., Olathe, KS
Pressure Switch Design, Workstation Design Planning.

Singapore Airlines, Singapore
Corporate Aircraft Interior Design.

Snorkel, Kansas City, MO
Paintscheme, Product Graphic Design.

Spectrum, San Diego, CA
Aircraft Interior Design

Sutherland Engineering, Lawrence, KS
Audio Amplifier Design.

The North Face, Oakland, CA
Store Fixture Design.

Trek Bicycles, Baraboo, WI
Product Graphic Design.

Wal-Mart, Bentonville, AR
Point-of-Sale Design, Interior Design.

Walker Manufacturing, Racine, WI
Exhibit Design.

Weed Eater, Houston, TX
String Trimmer Design, Lawnmower Design.

Western Publishing, Racine, WI
Exhibit Design.

Xerolet, Carson, CA
Product Design.

Xikar, Kansas City, MO
Product Design, Strategic Product Design.

TEACHING AWARDS

Educator Award, Industrial Design Society of America (IDSA).

“The IDSA Education Award is presented in recognition of significant, distinguished, and long-term contributions of career or tenured faculty to the field of industrial design academia. Further, these individuals have earned the respect and admiration of colleagues and students for their method and practice of teaching industrial design. Individuals are nominated by a peer or student for this distinction and a nomination must be accompanied by letters of recommendation on behalf of the candidate. All candidates who qualify are rigorously evaluated by IDSA's Awards Committee and subsequently approved by IDSA's Board of Directors before being bestowed with this great honor.” From the IDSA website (2019)

CTE Teaching Award, The University of Kansas. Selected by students for effective teaching, communication of expectations and efforts to help students meet these expectations, evaluation of students' work, use of interactive activities to enhance the classroom experience and the role of the teacher in one-on-one or small group interaction. (2010)

STUDENT EXPERIENTIAL LEARNING

spring 2023. Designing Footwear in VR. This new design course is a unique opportunity for students at KU to collaborate with their peers at Halmstad University in Sweden and industry partners Bogs Boots, Columbia, and New Balance. The course focusses on using AI image programs during the ideation phase of the design process and will utilize VR sketching and modeling with the help of equipment donations from Gravity Sketch.

One of the key components of the course is the use of AI image programs to generate ideas and inspiration for the students' designs. These programs analyze existing designs and trends to help the students identify potential opportunities for innovation. Additionally, the students are able to use these programs to create mood boards and concept sketches for their designs. With the help of equipment donations from Gravity Sketch, the students are able to create detailed 3D models of their designs, allowing them to visualize and refine their ideas in a more immersive way.

Finally, the course provides an opportunity for the students to work with industry partners such as Bogs Boots, Columbia, and New Balance.

spring, 2022, fall 2021, spring 2020, fall 2018, fall 2017. Designing Footwear. Cross-Disciplinary course for Architecture and Design students. This course familiarizes students with the basic knowledge and teaches the fundamental skillset needed to succeed as a footwear designer. Working with professional designers at major footwear companies such as Timberland, Adidas, and New Balance, KU students solve complex problems that occur when merging fashion and performance in an ever-changing marketplace. Graduates have gone on to find professional positions at Wolverine, Timberland, Vans, Bogs, and others.

fall 2021, spring 2018, spring 2017, fall 2015. Electric Guitar Design and Theory. Cross-Disciplinary course for Architecture and Design students. Primarily a digital fabrication class, our students work with luthiers and management at Mass Street Music in Lawrence to design, prototype, and test their electric guitars. Final presentation is before and audience at Mass Street Music and validates the aesthetics, function, and playability of their designs.

november 18-19 2019. Mechathon at Kathmandu University. National competition open to any University Design/ Engineering student in Nepal. I was invited as a judge and keynote speaker for the event. Student teams worked for 48 hours to respond to the theme of “Innovation for Impact”

winter 2019. Short Course. Cross-Disciplinary course held in East Palo Alto, CA. 10 Architecture and Design students spent 14 days in East Palo Alto, CA working with the non-profit Live in Peace. The recently gutted warehouse space was transformed into a working community bike shop call 2524 Raven Riders. The students spent first days building benches, painting the space, designing and organizing the bike shop. Next they learned how to take apart a bike, fix it, paint it, put it back together, and teach someone else how to do it.

Fall, 2017. Global Studio-Haiti. I was a faculty member (ARCH600) on a design/build graduate architecture team that is worked to make a new community center in Haiti. I went with the team to Haiti in January 2018 to complete on a demonstration construction.

spring 2017. 48-hour Repack Competition. National competition open to any University/Collage student around the country. Students received the prompt Friday at 6pm. Students created a solution, prototype it, brand it, create a video, edit and upload to it to youtube by the Sunday 6pm deadline.

winter 2017. Short Course. Cross-Disciplinary course held in Greensboro, Alabama. 12 Design students spent 14 days in Greenboro proto-typing, testing and building push bikes for toddlers and stand up paddle boards. Co-directed the class with Visual Communication professor Andrea Herstowski. Hale Empowerment and Revitalization Organization (HERO) works as a catalyst for community development to end rural poverty in the Alabama Black Belt (Hale County).

february 14-15, 2016. Hackathon at Indian Institute of Technology-Bombay in Mumbai, India. Make in India Hackathon is organized as part of the Make In India week. IIT-Bombay invited proposals from students across the country and chose 30 projects(10 in each theme) in three core areas of Urban Development: Water (To save water and to save from water), Transportation (User Friendly road Intersection), Energy (Smart Approaches to Sustainable Energy). I was invited as a judge to help students with their projects, but also to evaluate results. There were about 95 students working in teams to build prototypes, models and simulations of their respective ideas.

may 2016. Blitz/Workshop. 2-Week Short Course. Several Graphic Design students who had seen a school-wide presentation of my work at the Indian Institute of Design's Industrial Design Centre, wanted me to conduct a short summer course where they could design and build their own bamboo bicycles. The students had very limited mechanical skill, but deep enthusiasm for building their own bikes. The process was very interesting as we had to improvise needed tools and facilities, and the process involved multiple trips to the Dharavi slum to buy bamboo and needed components. At the end of the workshop, we all rode around the IIT-B campus on our bamboo bicycles.

fall 2016. Blitz/Workshop. 48-Hour Blitz/Spring. Cross-disciplinary group of students work together over the weekend to Think Wrong about how to solve the problem "The Average American owns 19 pairs of shoes. How do we reduce this obvious over-consumption and waste?" 20+ students from the University of Kansas and the Kansas City Art Institute followed the Blitz process of Thinking Wrong lead by professional advisors John Bielenberg (Future Partners), Jamie Koval (VSA partners) and Read Worth (Oregon Design Lab) and KU Professors Andrea Herstowski and Lance Rake. (A Blitz is set in an intensive, chaotic, energizing, workshop environment for prototyping, researching, doing, designing, and exploring that, while thinking wrong, produces a project or service that uses design thinking for the greater good.)

spring 2016. Blitz/Workshop. 48-Hour Blitz. Cross-Disciplinary group of over 20 University of Kansas students in Architecture and Design participated in a 48 Hour Blitz with John Bielenberg. The students worked together, gave up part of their first weekend back to school, sleep and egos. They were encouraged to get out in the community, talk to people, “Think Wrong” addressing the subject of “What is the movie theater experience in a a multi-device world? Co-directed with John Bielenberg and professors Jeremy Shellhorn and Andrea Herstowski.

spring 2016. 48-hour Repack Competition. National competition open to any University/Collage student around the country.

spring 2015. Wayfinding Workshop. Cross-Disciplinary wayfinding workshop with Dietmar Gotzelmann.

july, 2015. DeadSea15. 5- day Design/Engineering blitz at Shamoon College of Engineering in Beer Sheva, Israel. I was invited to keynote the conference in the era of “Creative Product Design”, and to present also some of our KU students’ work. I was invited to be member of their international jury of “ME Excellence” and “DeadSea15” competitions; and to run “CreaTeam” workshop with professors from Spain, India, and Israel for the SCE department students. The final competition was judged in the Dead Sea.

winter 2015. Short Course. Cross-Disciplinary course held in Greensboro, Alabama. Cross-disciplinary group of 12 University of Kansas Students spent two weeks in Greensboro, AL weaving, prototyping, and testing skateboards woven out bamboo. The work continued throughout the spring where the final two designs were refined and a successful Kickstarter campaign was launched. Proceeds went to HERO. Co-taught the class with Visual Communication professor Andrea Herstowski. Hale Empowerment and Revitalization Organization.

fall 2013. Blitz/Workshop. 48-Hour Blitz. Cross-disciplinary group of over 35 University of Kansas students in Architecture and Design participated in a 48 Hour Blitz with John Bielenberg. They were encouraged to get out in the community, talk to people, “Think Wrong” and come up with ideas that address the subject of “Water”.

summer 2013. Short Course. Cross-Disciplinary course held in Greensboro, Alabama. Cross-disciplinary group of students spent 3 weeks living and working together on the development of a bicycle using existing bikes and bamboo. Co-directed the class with Visual Communication professor Andrea Herstowski. Hale Empowerment and Revitalization Organization.

spring 2012. Blitz/Workshop. 48-Hour Blitz. Cross-disciplinary group of over 35 University of Kansas students in Architecture and Design participated in a 48 Hour Blitz with John Bielenberg. The students worked together and were encouraged to get out in the community, talk to people, “Think Wrong” and come up with ideas that address the subject of “Food Waste”.

spring 2011. Blitz/Workshop. 48-Hour Blitz. The students worked together in cross-disciplinary groups were encouraged to get out in the community, talk to people, “Think Wrong”. The students had less than 2 days to produce a 48 second video.

TEACHING & PROFESSIONAL DEVELOPMENT

Ongoing interest in the impact of creation tools on the industrial design process - from the use of the analog tools of drawing and sketch modeling in temporary materials through 3D modeling, digital fabrication and VR.

Fall, 2021

Gravity Sketch, a VR sketching/ modeling tool that that initiates in a digital 3D environment and remains 3D throughout the process all the way through to final delivery. Learning the tool and working with students to design products in Gravity Sketch.

Summer, 2021

Shoe Surgeon. Took an online course to learn to make footwear. I am combining this skillset with Gravity Sketch and digital fabrication tools such as 3D printing, laser cutting, and CNC machining to develop a program to teach students to make their own custom footwear using design and fabrication tools found commonly in FabLabs or Makerspaces in communities all over the world.

Spring 2019

Present. I am working with senior Industrial Design and Graphic Design faculty at RMIT in Melbourne, Australia to set up project based student and faculty design/build opportunities. This program would likely be in place already except for COVID-19 shutdowns.

Spring 2019

I am working with faculty members in Mechanical Engineering at Kathmandu University in Nepal and a prominent architect in Kathmandu to develop industrial design and architecture design/build projects for study abroad opportunities for our students in Nepal. This program would likely be in place already except for COVID-19 shutdowns.

UNIVERSITY OF KANSAS: RECENT TEACHING

Fall 2021

INDD 284	Basic Industrial Design Studio
INDD 312	Drawing for Industrial Design
INDD378	Special Problems in Design- Guitar Workshop

Spring 2021

INDD 378	Special Problems in Design, Footwear Design
INDD 302	Intermediate Industrial Design Studio
INDD212	Basic Industrial Design Drawing

Fall 2020

INDD 284	Basic Industrial Design Studio
INDD 312	Drawing for Industrial Design

Spring 2020

INDD 302	Intermediate Industrial Design Studio
INDD 378	Problems in Industrial Design:Footwear Design

Spring 2019

INDD 378	Special Problems in Design, Bicycle Design
INDD 302	Intermediate Industrial Design Studio

Winter, 2019

INDD 378	Problems in Industrial Design: East Palo Alto Multidisciplinary Workshop
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Fall 2018

INDD 284	Basic Industrial Design Studio
INDD 378	Footwear Design

Spring 2018

ADS 531	Internship
ARCH600	Special Topics- Haiti
ARCH600	Special Topics- Utility Bicycle Design
INDD 302	Intermediate Industrial Design Studio (2 sections)
INDD 378	Problems in Industrial Design: Electric Guitar Design & Theory

Fall 2017

ADS 531	Internship
INDD 284	Basic Industrial Design Studio (2 sections)
INDD 378	Problems in Industrial Design: Designing Footwear
INDD 715	Industrial Design- Graduate Studio

Spring 2017

ADS 560	Topics in Design: Push Bikes and Paddleboards (Alabama)
ADS 560	Topics in Design: Electric Guitar Design & Theory
ADS 580	Special Problems in Design
INDD 302	Intermediate Industrial Design Studio

Fall 2016

INDD 284	Basic Industrial Design Studio
INDD 378	Problems in Industrial Design: Photoshop ID Product Design
INDD 446	Advanced Industrial Design Studio
INDD 580	Senior Industrial Design Studio

Spring 2016

ADS 560	Topics in Design: Push Bikes and Paddleboards (Alabama)
INDD 378	Problems in Industrial Design: Push Bikes and Paddleboards

Fall 2015

INDD 284	Basic Industrial Design Studio
INDD 378	Problems in Industrial Design: Guitar Design and Theory
INDD 446	Advanced Industrial Design Studio

Spring 2015

INDD 302	Intermediate Industrial Design Studio
INDD 555	Portfolio

Fall 2014

ADS 560	Topics in Design: Drawing for Industrial Design II
INDD 284	Basic Industrial Design Studio
INDD 378	Problems in Industrial Design: Guitar Design and Theory
INDD 446	Advanced Industrial Design Studio

Summer 2014

ADS 560	Topics in Design: Bamboo, Alabama
INDD 378	Problems in Industrial Design: Bamboo, Alabama

Spring 2014

ADS 560	Topics in Design:
ADS 580	Special Problems in Design
INDD 302	Intermediate Industrial Design Studio
INDD 378	Problems in Industrial Design: Bamboo Skateboard Workshop
INDD 555	Portfolio

Fall 2013

ADS 560	Topics in Design: Basic Transportation Design
ADS 580	Special Problems in Design
INDD 378	Problems in Industrial Design: Basic Transportation Design
INDD 446	Advanced Industrial Design Studio

SERVICE: UNIVERSITY**University of Kansas University Senate.**

Member (Elected)

(August 2016 - July 2019)

University of Kansas Faculty Senate.

Member (Elected)

(August 2016 - July 2019)

Ad Hoc Committee on Post-Tenure Review.

Member (Appointed by KU Faculty Senate President) Reviewed Procedures for KU Post Tenure Review Process (Fall 2015 - Spring 2016)

SERVICE: SCHOOL OF ARCHITECTURE & DESIGN**School Council.**

Chair (Appointed)

The School Council advises the Dean on strategic and administrative issues and serves as a sounding board for the Dean regarding any planned initiatives and University directives that affect the School. (February 2021 -2022)

Faculty Affairs Committee. (August 2020 – 2022)

Common Shop. (Fall 2016 - Spring 2018)

Ad-Hoc Committee Post-Tenure Review. Analysis and review of KU post-tenure review procedures. (Spring 2015)

Ad Hoc Maker Space. (Fall 2014 - Spring 2015)

SERVICE: DEPARTMENT OF DESIGN

Design Chair Review Committee. (August 2020 - June 2021)

Faculty Evaluation Committee. (August 2020 - June 2021)

Industrial Design Search Committee. Chair (Appointed). (Fall, 2017-Spring, 2018)

Industrial Design Area Coordinator. Representative (Appointed).(Fall 2017 - Spring 2019)

Promotion & Tenure. Member (Appointed) (Fall 2017 - Spring 2019)

Undergraduate Studies. Member (Appointed) (Fall 2016 - Spring 2019)

Departmental Bylaws. Member (Appointed). (Fall 2016 - Spring 2018)

SERVICE: TO THE PROFESSION

Industrial Designers Society of America. Vice Chair of the Design Protection Section (2019 - 2022)

Fulbright US Scholar Program

Design National Screening Committee (2021-2022)

I was on a committee of 3 to review all of the design-related proposals from US senior (faculty & professional) applicants- reviewing over 30 applications

Fulbright US Student Program

Art & Design National Screening Committee (2021-2022)

I was on a committee of 3 to review all of the art and design-related proposals from US student applicants- reviewing over 40 applications

Fulbright Egyptian Scholar Program

Art & Design Technical Review (2021-2022)

Binational Fulbright Commission in Egypt

Design Technical review, Fulbright Student Program (2021)