

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of: Mustafa Burak Guclu et al.
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Appl. Serial No.: 19/044,270
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Title: STAND FOR MINI-COMPUTER

DECLARATION OF DR. HIMANSHU POKHARNA

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

By: 

Himanshu Pokharna, Ph.D.

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I. QUALIFICATIONS AND PROFESSIONAL EXPERIENCE

1. My qualifications for forming the opinions set forth in this Report are summarized here and include my educational background, career history, publications, and other relevant qualifications. My full *curriculum vitae* is attached as Exhibit A to this Report, and includes my detailed employment background, professional experience, and list of publications and patents.

2. I received my Bachelor of Technology and Master of Technology degrees (equivalent to B.S. and M.S. in the United States) in Mechanical Engineering from the Indian Institute of Technology, Bombay, India, in 1990 and 1992, respectively. I received my Ph.D. degree in Nuclear Engineering from Purdue University, West Lafayette, Indiana, in 1997. My Ph.D. thesis focused on modeling of two-phase flow dynamics in heat transfer systems and specifically developed analytical models for the simultaneous flows of water and water vapor in a system during heat absorption. In addition, I received by MBA degree from The Wharton School of University of Pennsylvania, Philadelphia, Pennsylvania, in 2006.

3. For over 25 years, I have led various companies in their thermal-mechanical technology development. I founded and currently serve as Director of Deep Materials Inc., a company devoted to developing thermal management components, such as thermal interface materials and heat sinks for computing and consumer electronic systems. I am the Founder and Board Member of Inficold Inc., a company specializing in the design and manufacture of energy storage

integrated refrigeration products, including cold storages, PCM packs, and air conditioners. I am also the Owner of Deeia Inc., a thermal-mechanical consulting business that has provided design services and other technology development services to various large consumer electronics/computing companies as well as startups.

4. Before my current positions, I co-founded and served as Board Member and Vice President of Business Development for Sheetak Inc., a company that applies an innovative thermoelectric cooling technology to power generation and refrigeration. I was the Vice President of Product Management and Marketing for Ventiva Inc., a company specializing in solid state cooling technology. I also served as the Vice President of Product Development for k-Technology Corp., a defense hardware company developing high thermal conductivity materials. I also worked for Intel Corp. as Staff Engineer, Thermal Technology Manager, then Group Manager, overseeing thermal technology development and deployment for the mobile products group and developing thermal architecture for laptop personal computers.

5. During my career, I also have authored and co-authored over 20 papers and keynote addresses on thermal technology for various journals and conferences. I co-authored “Skin Cooling and Other Challenges in Future Mobile Form Factor Computing Devices,” published in volume 39 of the Microelectronics Journal in 2008. I co-authored “Lid Cooling for Notebooks,” published in the proceedings

for the 11th Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems in 2008. I co-authored and presented “Mobile Thermal Challenges in Future Platforms” at THERMES 2007: Thermal Challenges in Next Generation Electronic Systems, Santa Fe, NM, in 2007. I also co-authored and presented “Challenges and Advances of Heat Pipes in Cooling Notebook Systems” at the ASME InterPACK Conference, Vancouver, Canada, in 2007. I also co-authored “Use of Heat Pipes in Multiple Component Cooling in Laptop PCs,” published in the proceedings for the 8th International Heat Pipe Symposium in 2006. I also co-authored and presented “Remote Heat Pipe Based Heat Exchanger Performance in Notebook Cooling” at the ASME Summer Heat Transfer Conference, San Francisco, CA, in 2005.

6. I was selected as a speaker and delivered “Application of Thermal Management in Energy Devices” at the 2011 Annual Taiwan Thermal Management Association Meeting, Taipei, Taiwan. I also delivered “Notebook Thermal Technology: Need for Standardized Metrology—Call to Action for Taiwan Thermal Management Association” at the 2007 Annual Taiwan Thermal Management Association Meeting, Taipei, Taiwan. I was the co-author for keynote paper titled “Heat Pipe Needs in Future Mobile Platforms” at the 14th International Heat Pipe Conference, Florianopolis, Brazil, in 2007. I was also the author of the keynote paper titled “Design and Test Methodologies of Use of Heat Pipes in Laptop PCs” which was presented at the 8th International Heat Pipe

Symposium, Kumamoto, Japan, in 2006. I was also the keynote speaker and delivered “Microchannel Cooling in Computing Platforms: Performance Needs and Challenges in Implementation” at the 2nd ASME-JSME International Microchannel Conference, Rochester, NY, in 2004. A full list of my publications and addresses is included in Exhibit A.

7. Furthermore, I am the named inventor on more than 120 issued and pending patents in thermal technology. I am the inventor of U.S. Patent No. 9,903,621 B1, entitled “Cooling System with Thermal Battery.” I am also the inventor of U.S. Patent No. 9,574,832 B2, entitled “Enabling an Aluminum Heat Exchanger with a Working Fluid. I am also the inventor of U.S. Patent No. 8,043,703 B2, entitled “Thermally Conductive Graphite Reinforced Alloys.” I am also the inventor of U.S. Patent No. 7,308,931 B2, entitled “Heat Pipe Remote Heat Exchanger (RHE) with Graphite Block.” I am also the inventor of U.S. Patent No. 7,269,005 B2, entitled “Pumped Loop Cooling with Remote Heat Exchanger and Display Cooling.” I am also the inventor of U.S. Patent No. 7,243,497 B2, entitled “Apparatus to Use a Refrigerator in Mobile Computing Device.” A full list of the issued and pending patents and additional details of my education and work experience are set forth in my *curriculum vitae*, which is attached as Exhibit A to this Report.

8. Exhibit B to this report is a selected list of my issued and pending patents related to docking stations, excerpted from my *curriculum vitae* (Exhibit A).

9. I am not an attorney and offer no legal opinions, but in the course of my work, I have had experience studying and analyzing patents and patent claims from the perspective of a person of ordinary skill in the art (“POSITA”).

10. I have been retained on behalf of America Ugreen Limited (“Petitioner”) to offer technical opinions relating to U.S. Patent No. 12,436,567 (“the ’567 Patent”) and prior art references relating to its subject matter. I have reviewed the ’567 Patent (Ex.1001), and relevant excerpts of the prosecution history of the ’567 Patent (Ex.1002). I have also reviewed the following prior art and corroborating references:

- Ex.1004 CN 216561630 U by Ye (“Ye”)
- Ex.1005 Certified translation of CN 216561630 U by Ye (“Ye”)
- Ex.1006 “Apple’s all-new Mac mini is more mighty, more mini, and built for Apple Intelligence” by Apple (“Apple”)
- Ex.1007 US 9698613 B2 by Koshiishi (“Koshiishi”)
- Ex.1008 Wayback Machine Capture on March 13, 2020 of ASIN B07YSWZNNW by Satechi (“Satechi”)
- Ex.1009 WO 2020/113541 A1 by Liao (“Liao”)
- Ex.1010 Certified translation of WO 2020/113541 A1 by Liao (“Liao”)

- Ex. 1011 “Mac mini M4 (2024): docks, stands and other Accessories”
- Ex. 1012 US 2022/0366400 by Shen (“Shen”)
- Ex. 1013 Wayback Machine Capture on October 29, 2024 of Apple
- Ex. 1014 “M4 Mac Mini’s Power Button Has New Bottom Location” by Juli Clover
- Ex. 1015 “For everyone asking, the power button on the new M4 Mac mini is on the bottom” by chancehmiller, Thread
- Ex. 1016 “Apple Moves the M4 Mac Mini’s Power Button To the Bottom” by msmash
- Ex. 1017 “Yes, the M4 Mac mini’s power button is on the bottom” by Patrick O’ Rourke
- Ex. 1018 “M4 mini,” busybee/fluffy rambles
- Ex. 1019 “Apple’s New Mac mini Sports up to an M4 Pro with 14-core CPU and 20-core GPU” by GGforever
- Ex. 1020 U.S. Design Patent Application Ser. No. 29/971,079, filed October 31, 2024.

11. I have also reviewed various supporting references and other documentation as further noted in my opinions below.

12. Counsel has informed me that I should consider these materials through the lens of one of ordinary skill in the art related to the '567 Patent at the time of the earliest possible priority date of the '567 Patent, and I have done so during my review of these materials. The application leading to the '567 Patent was filed on February 3, 2025, which is a continuation of U.S. Patent Application Ser. No. 18/956,609, filed on November 22, 2024, and is also a continuation-in-part of U.S. Design Patent Application Ser. No. 29/971,079, filed on October 31, 2024 (“the Critical Date”). Counsel has informed me that the Critical Date represents the earliest possible priority date to which the Challenged Claims of '567 Patent could be entitled, and I have therefore used that Critical Date in my analysis below.

13. I have no financial interest in the parties or in the outcome of this proceeding. I am being compensated for my work as an expert on an hourly basis at a rate of \$750 per hour, plus reasonable expenses. My compensation is not dependent on the outcome of these proceedings or the content of my opinions.

14. In writing this declaration, I have considered the following: my own knowledge and experience, including my work experience in the fields of mechanical engineering, industrial design, design of computer systems including accessories, and my experience in working with others involved in those fields. In addition, I have analyzed various publications and materials, in addition to other materials I cite in my declaration. My opinions, as explained below, are based on my education, experience, and expertise in the fields relating to the

'567 Patent. Unless otherwise stated, my testimony below refers to the knowledge of one of ordinary skill in those fields as of the Critical Date, or before. Any figures that appear within this document have been prepared with the assistance of Counsel and reflect my understanding of the '567 Patent and the prior art discussed below.

15. This declaration explains the conclusions that I have formed based on my analysis. For the reasons discussed in this Declaration, I conclude that claims 1-8 of the '567 Patent are invalid. To summarize those conclusions, based upon my knowledge and experience and my review of the prior art publications listed above, I believe that:

- Claims 1-3 and 5-7 of the '567 Patent are rendered obvious by Ye, Apple, and Koshiishi;
- Claims 2 and 8 of the '567 Patent are rendered obvious by Ye, Apple, Koshiishi, and Satechi;
- Claim 4 of the '567 Patent is rendered obvious by Ye, Apple, Koshiishi, and Liao;
- Claims 1-8 of the '567 Patent are rendered obvious by Liao, Apple, and Koshiishi;
- Claims 2 and 8 of the '567 Patent are rendered obvious by Liao, Apple, Koshiishi, and Satechi;

- Claims 1-3, 5, and 8 of the '567 Patent are rendered obvious by Satechi, Apple, and Shen;
- Claims 4 and 7 of the '567 Patent are rendered obvious by Satechi, Apple, Shen, and Liao;
- Claim 6 of the '567 Patent is rendered obvious by Satechi, Apple, Shen, and Koshiishi;
- Claim 6 of the '567 Patent is indefinite because a POSITA would not understand the scope of the claimed subject matter with reasonable certainty in view of the term “horizontally curved surface.”

II. LEGAL STANDARDS

A. Terminology

16. I have been informed by Counsel and understand that the best indicator of claim meaning is its usage in the context of the patent specification as understood by one of ordinary skill. I further understand that the words of the claims should be given their plain meaning unless that meaning is inconsistent with the patent specification or the patent's history of examination before the Patent Office. Counsel has also informed me, and I understand that, the words of the claims should be interpreted as they would have been interpreted by one of ordinary skill at the time the invention was made (not today). Because I do not know at what date the invention as claimed was made, I have used the Critical Date of the '567

Patent as the point in time for claim interpretation purposes. That date was October 31, 2024.

B. Legal Standards for Obviousness

17. I have been informed by Counsel and understand that documents and materials that qualify as prior art can render a patent claim unpatentable as obvious. I am informed by Counsel and understand that all prior art references are to be looked at from the viewpoint of a person of ordinary skill in the art at the time of the invention, and that this viewpoint prevents one from using his or her own insight or hindsight in deciding whether a claim is obvious.

18. I have been informed by Counsel and understand that a claim is unpatentable for obviousness under 35 U.S.C. § 103 (in the AIA form of that statute that applies to the '567 Patent) “if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains.” I am informed by Counsel and understand that obviousness may be based upon a combination of references. I am informed by Counsel and understand that the combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results. However, I am informed by Counsel and understand that a patent claim composed of several

elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.

19. I have been informed by Counsel and understand that when a patented invention is a combination of known elements, the Patent Trial and Appeal Board (PTAB) must determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue by considering the teachings of prior art references, the effects of demands known to people working in the field or present in the marketplace, and the background knowledge possessed by a person having ordinary skill in the art.

20. I have been informed by Counsel and understand that a patent claim composed of several limitations is not proved obvious merely by demonstrating that each of its limitations was independently known in the prior art. I am informed by Counsel and understand that it is improper to use hindsight in an obviousness analysis, and that a patent's claims should not be used as a "roadmap."

21. I have been informed by Counsel and understand that an obviousness inquiry requires consideration of the following factors: (1) the scope and content of the prior art; (2) the differences between the claims and the prior art; (3) the level of ordinary skill in the pertinent art; and (4) any objective indicia of non-obviousness cited by the patent owner, such as commercial success, long-felt but unresolved need, failure of others, industry recognition, copying, and unexpected

results. I understand that the foregoing factors are sometimes referred to as the “Graham factors.”

22. I have been informed by Counsel and understand that for a prior art reference to be relied upon in an obviousness analysis, it must constitute “analogous art.” I understand that a reference is analogous art if it satisfies either of two conditions: (1) it is from the same field of endeavor as the claimed invention, regardless of the problem addressed; or (2) if the reference is not within the same field of endeavor, it is still reasonably pertinent to the particular problem with which the inventor is involved. I further understand that a reference is reasonably pertinent if, because of the matter with which it deals, it logically would have commended itself to an inventor’s attention in considering his or her problem.

23. I have been informed by Counsel and understand that an obviousness evaluation can be based on a combination of multiple prior art references. I understand that the prior art references themselves may provide a suggestion, motivation, or reason to combine, but that the nexus linking two or more prior art references is sometimes simple common sense. I have been informed by Counsel and understand that an obviousness analysis recognizes that market demand, rather than scientific literature, often drives innovation, and that a motivation to combine references may be supplied by the direction of the marketplace.

24. I have been informed by Counsel and understand that if a technique has been used to improve one device, and a person of ordinary skill at the time of invention would have recognized that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

25. I have been informed by Counsel and understand that practical and common-sense considerations should guide a proper obviousness analysis, because familiar items may have obvious uses beyond their primary purposes. I have been informed by Counsel and understand that a person of ordinary skill looking to overcome a problem will often be able to fit together the teachings of multiple prior art references. I have been informed by Counsel and understand that an obviousness analysis therefore takes into account the inferences and creative steps that a person of ordinary skill would have employed at the time of the alleged invention.

26. I have been informed by Counsel and understand that a proper obviousness analysis focuses on what was known or obvious to a person of ordinary skill at the time of invention, not just the patentee. Accordingly, I understand that any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.

27. I have been informed by Counsel and understand that a claim can be obvious in light of a single reference, without the need to combine references, if the elements of the claim that are not found explicitly or inherently in the reference can be supplied by the common sense of one of skill in the art.

28. In sum, my understanding is that prior art teachings are properly combined where one of ordinary skill having the understanding and knowledge reflected in the prior art and motivated by the general problem facing the inventor, would have been led to make the combination of elements recited in the claims. Under this analysis, the prior art references themselves, or any need or problem known in the field of endeavor at the time of the invention, can provide a reason for combining the elements of multiple prior art references in the claimed manner.

C. Legal Standards for Indefiniteness

29. I have been informed by Counsel and understand that 35 U.S.C. § 112(b) requires that the specification “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter” that the inventor regards as his or her invention. I understand that the requirement of this provision is commonly called the “definiteness” requirement.

30. I have been informed by Counsel and understand that definiteness is to be evaluated from the perspective of someone skilled in the relevant art, and that

definiteness is measured from the viewpoint of a person skilled in the art at the time of the effective filing date of the patent's application.

31. I have been informed by Counsel and understand that, in assessing definiteness, claims are to be read in light of the patent's specification and prosecution history. I have also been informed by Counsel and understand that the definiteness requirement requires that a patent's claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty.

32. I have been informed by Counsel and understand that the purpose of the definiteness requirement is to make sure that the patent claims adequately perform their function of notifying the public of the scope of the patent, and of the patent owner's right to exclude. For example, if a competitor attempting to practice a claimed invention or design around it would be unable to discern the metes and bounds of the invention, the claim may be indefinite.

D. Level of Ordinary Skill in The Art

33. In my opinion, a POSITA relating to, and at the time of, the '567 Patent's Critical Date would have been someone with at least a Bachelor's Degree (or higher degree) in an academic area emphasizing mechanical engineering, industrial design, or an equivalent field with two or more years of work experience in designing and manufacturing support structures, housings, or peripheral accessories for consumer electronics. Additional education in a

relevant field, or relevant industry experience may compensate for a deficit in one of the other aspects of the requirements stated above.

34. Based on my knowledge, skill, and experience, I have a good understanding of the capabilities of the POSITA. Indeed, I have participated in organizations, and worked closely with many such persons, in various capacities including collaborating, supervising, and leading them, over the course of my career. For example, from my industry experience, I am familiar with what an engineer would have known and found predictable in the art. Furthermore, I possess those capabilities myself.

III. THE '567 PATENT

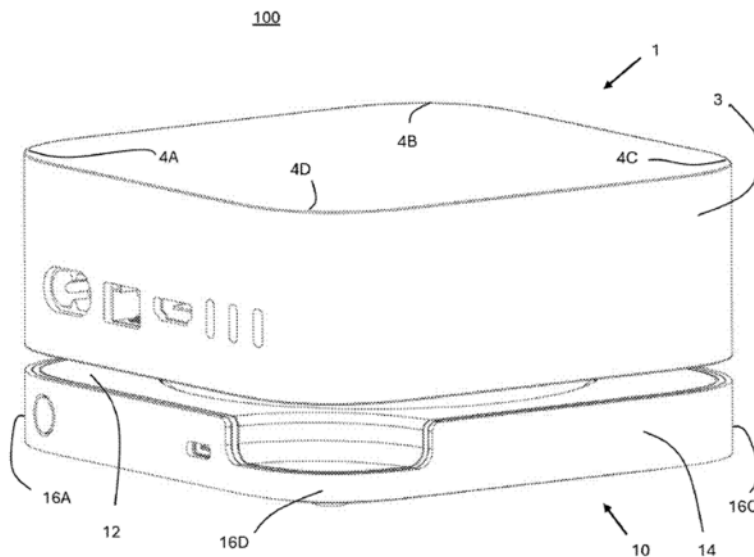
A. Overview of the '567 Patent

35. The '567 Patent concerns the field of peripheral support structures and accessories for electronic devices, specifically stands, hubs, and docking stations designed for use with mini-computers, such as the Apple Mac mini. Ex. 1001, 1:14-17.

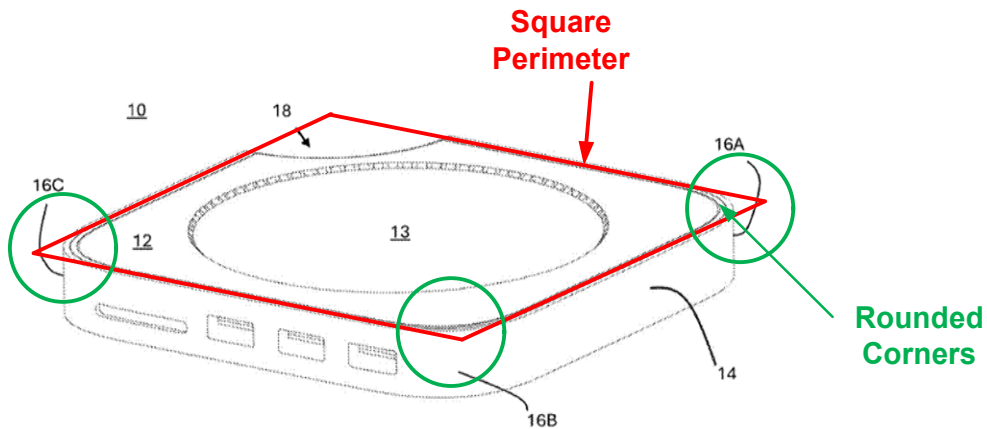
36. Prior to the Critical Date of the '567 Patent, docking bases and stands were widely used in the industry to support, raise, and increase the connectivity of mini-computers. These docking bases and stands are accessories specifically made to connect with particular consumer devices. Thus, when developing a stand for mini-computers, ensuring structural and functional compatibility with the target mini-computer is a main technical consideration. This entails matching the stand's physical dimensions to the computer, placing external data ports

optimally to minimize wire clutter, and making sure the stand doesn't obstruct visual or physical access to the computer's underlying features, like power buttons, exhaust vents, or lighting indicators.

37. The '567 Patent is directed to a "stand for use with a mini-computer." Ex. 1001, Abstract, FIG. 1. Independent Claim 1 recites a mini-computer stand comprising a top configured for placement of the mini-computer and a perimeter that is square with a plurality of rounded corners. The main feature of the alleged invention is that the stand's "back corner" comprises a "cutaway in top and side portions...that does not extend through a bottom side." Ex. 1001, Claim 1. Specifically, this cutaway is adapted to "expose a corresponding back bottom portion of the mini-computer...when the mini-computer is placed on the top of the mini-computer stand." Ex. 1001, Claim 1.



Reproduced FIG. 1 of the '567 Patent



Annotated FIG. 3A of the '567 Patent

38. Claims 2, 3, and 4 recite a hub created by adding data ports on the front and/or back sides of the stand. Claim 5 recites relative heights of the cutaway. Claim 7 adds a plurality of feet to the bottom of the stand. Claim 8 recites a computer system comprising the mini-computer and the stand, both of which have substantially the same perimeters. These are standard product architecture choices with well-understood benefits to this basic stand design. Ex. 1001, Claims 2-8.

B. Interpretation of the '567 Patent Claims at Issue

39. For purposes of my analysis in this PGR proceeding, I have been informed by Counsel and understand that the terms that appear in the claims of the '567 Patent should be interpreted according to their plain and ordinary meaning. I have also been informed by Counsel and understand that, in determining the plain and ordinary meaning, the words of a claim are first given their plain meaning that those words would have had to one of ordinary skill at the time of the alleged invention. I have also been informed by Counsel and understand that the structure

of the claims, the specification and file history also may be used to better construe a claim insofar as the plain meaning of the claims cannot be understood. Moreover, I have been informed by Counsel and understand that treatises and dictionaries may be used, albeit under limited circumstances, to determine the meaning attributed by one of ordinary skill to a claim term at the time of filing. I have followed this approach in my analysis, and for all of the claim terms considered in this declaration, I have applied the plain and ordinary meaning of each term to a POSITA at the time of the alleged invention.

40. I have also been informed by Counsel and understand that the words of the claims should be interpreted as they would have been interpreted by one of ordinary skill at the time the invention was made (not today). For purposes of my analysis here, I have used October 31, 2024 as the date of invention. Without exception, however, my understanding of the proper meaning of the recited claim elements in this declaration would be correct if the date of invention was anywhere in the 2020s to the mid-2020s.

41. In addition, Claim 6 recites a “horizontally curved surface.” As detailed in §IV.I below, it is my opinion that this term is indefinite because it lacks any objective boundary or clear reference plane, and there is no support in the specification or prosecution history to inform a POSITA of its scope. To the extent the term is amenable to any construction that would preserve Claim 6, I have applied the plain and ordinary meaning of this term.

IV. APPLICATION OF PRIOR ART TO THE '567 PATENT CLAIMS

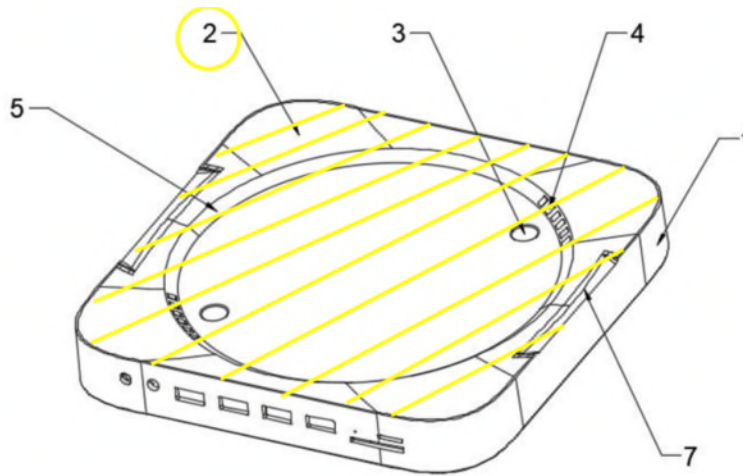
A. GROUND 1: Claims 1-3 and 5-7 of the '567 Patent are rendered obvious by Ye, Apple, and Koshiishi

1. Overview of Ye

42. I understand that Ye was patented on May 17, 2022.

43. Ye is directed to “[a] base docking station for a desktop computer, comprising a docking station body as a base and used to place the desktop computer. The docking station body is equipped with a cooling fan, and is provided with an air outlet and an air inlet. The air outlet and the air inlet form a convection duct to dissipate heat from the desktop computer.” Ex. 1005, Abstract, [0005].

44. Specifically, FIG. 1 of Ye discloses “a base docking station for a desktop computer comprises a docking station body 1. The top surface of the docking station body 1 is defined as a placement surface 2 and used for the desktop computer.” Ex. 1005, [0023]. According to Ye, “the docking station for a host is mainly adapted to an MAC mini, “which can allow the desktop computer to be stably placed on the docking station body 1.” Ex. 1005, [0024].



Annotated FIG. 1 of Ye

45. Based on my technical review, Ye describes a base docking station engineered for desktop computers, specifically identifying the Mac mini as its primary use case. From an engineering perspective, the core of Ye is a docking station body that serves as a foundational support base. The top surface acts as a placement platform, structurally designed with a square footprint and rounded corners to perfectly accommodate the mini-computer, ensuring it sits stably on the base.

46. From a technical and product design perspective, the base docking station described in Ye is analogous to the claimed invention because it is in the same field of endeavor as the claimed invention of the '567 Patent. The '567 Patent focuses on designing “a stand for use with a mini-computer.” Ex. 1001; 1:14-17, Claim 1. Similarly, Ye is directed toward engineering “a base docking station of desktop computers,” explicitly noting that its structure is “mainly

adapted to an MAC mini.” Ex. 1005, [0001], [0024]. Because both documents are expressly concerned with the mechanical design of peripheral support structures, specifically docking bases and stands built to accommodate desktop mini-computers like the Mac mini, a POSITA developing the stand in the ’567 Patent would naturally consider the docking station in Ye as part of their direct design space.

2. Overview of Apple

47. Apple discloses Mac Mini M4, a mini-computer that has a square perimeter with rounded corners, which was unveiled by Apple Inc. on October 29, 2024. Ex. 1006, figure in p. 2, The power button for Mac Mini M4 is located on the bottom of the device. Ex. 1006, p. 2. Specifically, the power button is located below three Thunderbolt ports on the rear left side of the device when viewed from the front. Ex. 1006, p. 2.



Annotated Figure of Apple

48. I have reviewed Apple's press release of Mac mini M4 which was publicly unveiled on October 29, 2024. Ex. 1013. As a POSITA, the most notable physical constraint of this specific device model is its user interface layout. While it retains the industry-standard square perimeter with rounded corners, Apple relocated the primary power button entirely to the bottom of the chassis, specifically on the rear-left side below the Thunderbolt ports. Ex. 1013.

49. This hardware change created an immediate and widely recognized physical constraint for any third-party accessories. Contemporary engineering blogs and public forums immediately pointed out that standard flat docking stations would completely obstruct a user's ability to turn the computer on or off. Exs. 1014-1019.

50. I understand that Apple was sufficiently available to persons interested in the relevant art at least as early as October 29, 2024 because Apple shows a publication date of "October 29, 2024." In addition, a Wayback Machine capture proves that the exact same content became available on October 29, 2024. Ex. 1013. The URL of capture includes the URL of the original website and a time stamp "20241029152102," which indicates the year, month, day, hour, minute, and second the capture was made. Ex. 1013.

51. Furthermore, a number of publications and blogs dated October 29, 2024 attest to the fact that the Mac Mini M4’s design, including the power button’s location, was publicly available on or before October 29, 2024. Exs. 1014-1019. For example, an article “M4 Mac Mini’s Power Button Has New Bottom Location,” published by Juli Clover on October 29, 2024, criticized the button placement of Mac Mini M4 as shown in the following figure: “[a]s it turns out, the power button for the device is located on the bottom, so as Mr. Macintosh pointed out, you’ll need to tip the Mac mini up in order to turn it on (or off, using the physical button).” Ex. 1014, p. 1.



Reproduced figure in Ex. 1014

52. Thus, it is my opinion that the specific design disclosed in Apple, especially the power button's location, were publicly known and available prior to the Critical Date.

53. From a technical and product design perspective, the Apple Mac Mini M4 is analogous to the claimed invention because it is in the same field of endeavor as the claimed invention of the '567 Patent. The '567 Patent details the design of a stand explicitly intended to support a mini-computer. *See* Ex. 1001 at Abstract, Claim 1, and 1:14-17. Meanwhile, the Apple reference describes the target device itself, the Mac Mini M4. Because developing a peripheral accessory requires a complete understanding of the hardware it is meant to hold, a POSITA working in this area would view the mini-computer and its stand as part of the same continuous design space.

54. Even if Apple were considered to be outside the specific field of endeavor of designing support stands, it is reasonably pertinent to the particular problem addressed by the claimed invention in the '567 Patent. The '567 Patent addresses the mechanical problem of designing a stand that supports a mini-computer without obstructing access to its physical features. Ex. 1001, 1:66-2:16. Apple discloses the Mac mini M4, which defines the precise physical constraints, namely, a square footprint and a bottom-mounted power button, that any such stand must accommodate to function properly. Because solving this

obstruction problem requires a complete baseline understanding of the target device's geometry, the Apple reference logically would have commended itself to a POSITA's attention when seeking to design a compatible stand that maintains access to essential device features.

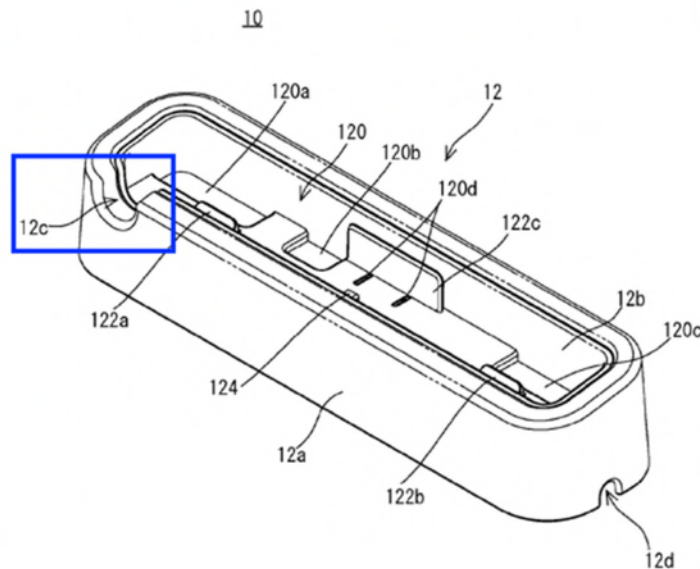
55. Furthermore, as demonstrated by the contemporaneous publications and engineering forums discussed above, the release of the Mac mini M4 created an immediate and widely recognized physical constraint for third-party accessories. Exs. 1014-1019. A POSITA seeking to create a compatible stand would naturally look to the Apple reference for their baseline requirements. The Mac mini M4 dictates the precise physical constraints that a stand must accommodate, such as its square footprint and the uniquely bottom-mounted power button. Therefore, any POSITA creating a compatible stand would inherently rely on the Mac mini M4's physical chassis to ensure their accessory does not obstruct the device's essential hardware functions.

3. Overview of Koshiishi

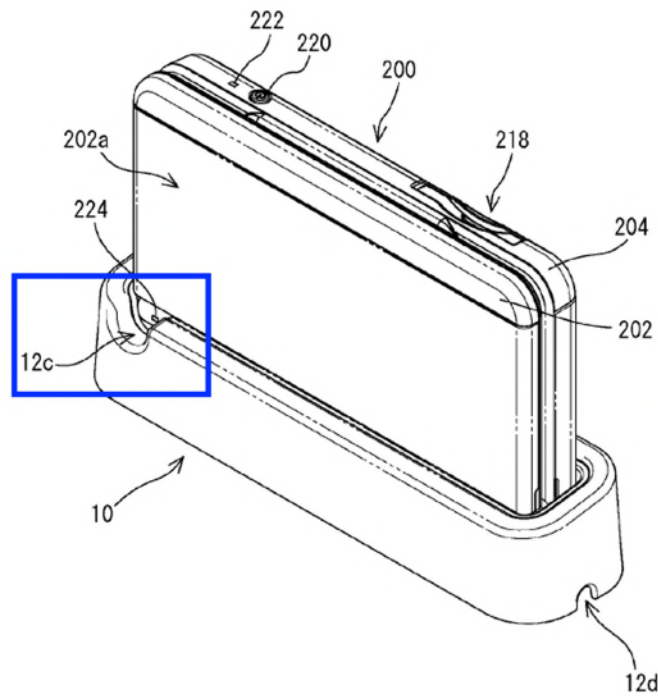
56. I understand that Koshiishi was patented on July 4, 2017.

57. Koshiishi is directed to a charging system and charging stand charging a battery of electronic device. Ex. 1007, 1:12-13. Specifically, Koshiishi discloses “a charging system comprising a foldable electronic device and a charging stand that receives and charges the electronic device.” Ex. 1007, at 1:22-24.

58. In addition, FIG 1 and FIG. 6(A) of Koshiishi disclose a charging stand 10 with “a notch 12c of a semi-circle shape is formed in upper left of the main body 12 (the outer side member 12a and the inner side member 12b) in the front of the charging stand 10.” Ex. 1007, 5:57-60. “[T]he charging stand further compris[es] a notch at a position corresponding to a light-emitting portion of the electronic device on a part of a side of the inserting portion when inserting the electronic device into the inserting portion.” Ex. 1007, 2:36-40.



Annotated FIG. 1 of Koshiishi



Annotated FIG. 6(A) of Koshiishi

59. In analyzing Koshiishi, I note that it describes a charging stand designed to physically hold and support an electronic device. What is relevant here from a mechanical design standpoint is Koshiishi's approach to physical and visual accessibility. When an electronic device is placed into a fitted stand, the stand's walls naturally obscure the bottom or side edges of the device.

60. To solve this, Koshiishi teaches the use of a localized, semi-circular notch (12c) formed into the upper peripheral edge of the stand's body. Ex. 1007, 5:57-60. This cutaway spans the top and side portions of the stand wall but stops short of extending through the bottom side, maintaining the structural integrity of the base. Ex. 1007, FIGS. 1 and 6(A). The explicit engineering purpose of

this notch is to expose an underlying functional feature (in this case, a communication lamp 224) of the docked device that would otherwise be blocked. Ex. 1007, 2:36-40 FIGS. 1 and 6(A). Because Koshiishi provides a direct, known structural solution to the exact problem of preserving access to obstructed device features, a POSITA would naturally look to it when designing peripheral stands.

61. From a technical and product design perspective, the charging stand described in Koshiishi is analogous to the claimed invention because it is in the same field of endeavor as the claimed invention of the '567 Patent. The '567 Patent focuses on designing “a stand for use with a mini-computer.” *See* Ex.1001; 1:14-17, Claim 1. Similarly, Koshiishi is directed toward engineering “a charging stand charging a battery of electronic device.” *See* Ex.1007, 1:12-13. Because both documents are expressly concerned with the mechanical design of stands built for supporting electronic devices, a POSITA developing the stand in the '567 Patent would naturally consider the charging stand in Koshiishi as part of their direct design space.

62. Even if Koshiishi were considered to be outside the specific field of endeavor of designing hubs for mini-computers, it is reasonably pertinent to the particular problem addressed by the claimed invention in the '567 Patent. As discussed above, the release of the Mac mini M4 presented an immediate and

widely recognized physical constraint for accessory designers. Exs. 1014-1019. Confronted with the functional necessity of providing access to the bottom-mounted power button, a POSITA would naturally look to Koshiishi for a proven solution. Koshiishi solves this mechanical issue by utilizing a strategically placed cutaway (notch 12c) to keep a functional feature (a communication lamp 224) visible and accessible on the docked device. Because Koshiishi provides a direct, established structural solution to the common problem of preserving access to otherwise obstructed device components, any POSITA working on a compatible mini-computer stand would inherently rely on these teachings to ensure they do not block essential underlying features.

4. Analysis

Claim 1

[1.0] A mini-computer stand for use with a mini-computer that has a square perimeter with rounded corners, the mini-computer stand comprising:

63. To the extent the preamble is limiting, Ye discloses [1.0].

64. As discussed in §IV.A.1, Ye discloses “a base docking station of desktop computers” and that “the docking station for a host is mainly adapted to an MAC mini.” Ex. 1005, [0001], [0024]. As a POSITA working in this field, I recognize that all Apple MAC Mini models, including the MAC Mini M4 disclosed in Apple, utilize square perimeters with rounded corners.

65. As discussed in §IV.A.2, in the same field of endeavor, Apple discloses Mac Mini M4, i.e., a mini-computer that has a square perimeter with rounded corners. Ex. 1006, p. 2.



Annotated Figure of Apple

66. As discussed in §IV.A.3, in the same field of endeavor, Koshiishi discloses a charging stand for electronic device. Ex. 1007, 1:12-13.

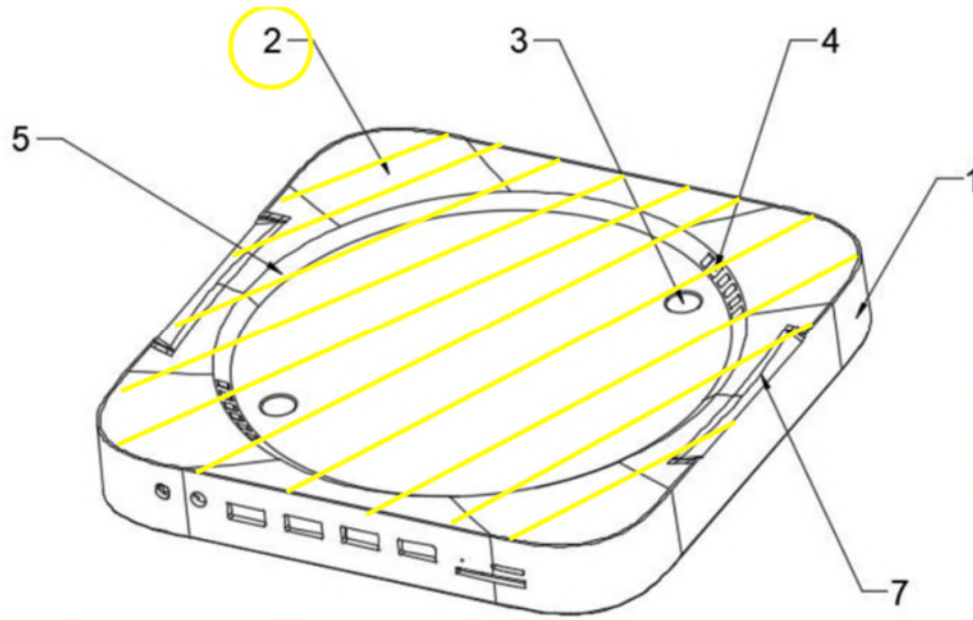
[1.1] a top configured for placement of the mini-computer; and

67. As set forth in detail below, Ye discloses [1.1].

68. Specifically, Ye discloses a top surface that is “defined as a placement surface 2 and used for the desktop computer.” Ex. 1005, FIG. 1, [0023].

69. As shown in the following Figure 1 of Ye, Ye discloses that “a base docking station for a desktop computer comprises a docking station body 1. The top surface of the docking station body 1 is defined as a placement surface 2

and used for the desktop computer. The placement surface 2 is equipped with several pads 3, and the placement surface 2 is provided with a placement groove 21 and several air outlets 4.” Ex. 1005, FIG. 1, [0023].



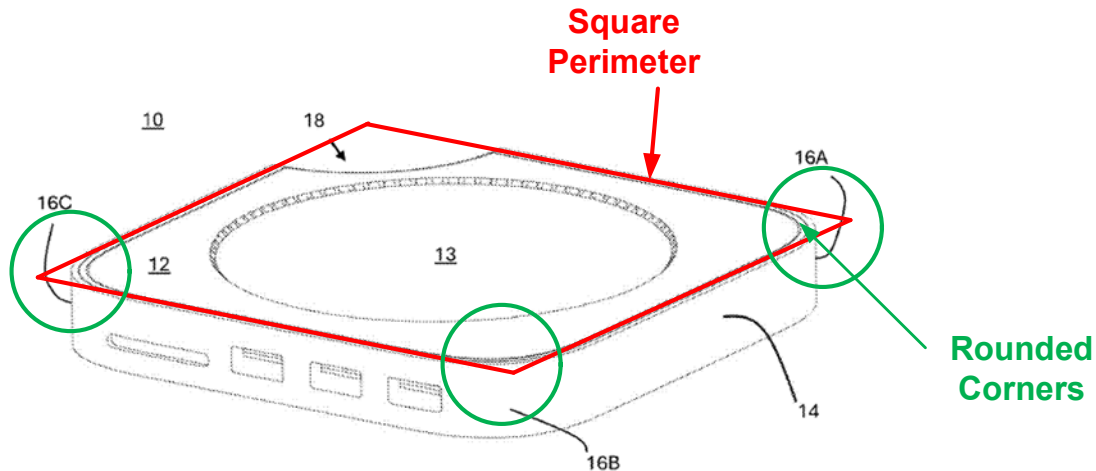
Annotated FIG. 1 of Ye

70. Therefore, it is my opinion that Ye teaches each and every limitation of [1.1].

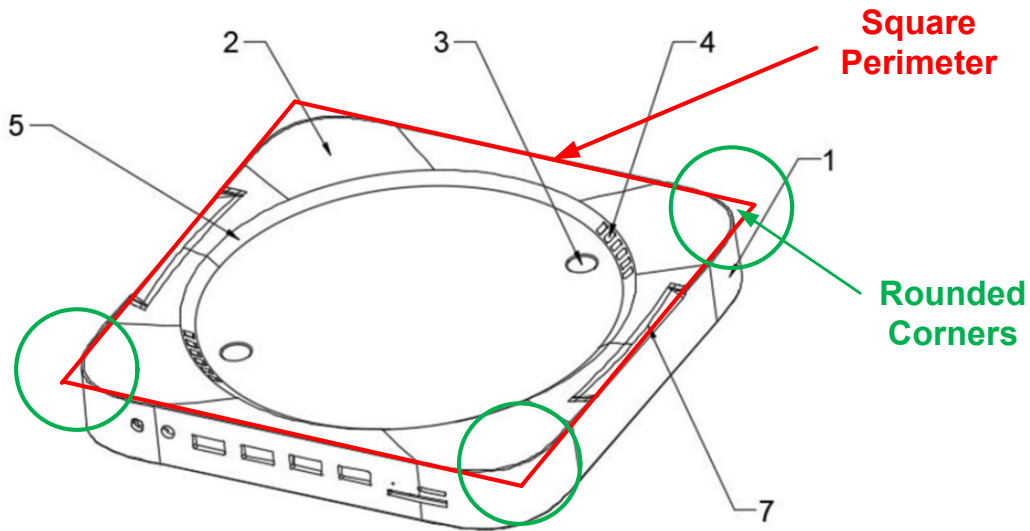
[1.2] a perimeter that is square with a plurality of rounded corners,

71. As set forth in detail below, Ye discloses [1.2].

72. Specifically, as shown in the following Figure 2 of Ye, Ye discloses a base docking station, having a perimeter that is square (shown in red) with a plurality of rounded corners (shown in green).



Annotated FIG. 3A of the '567 Patent



Annotated FIG. 1 of Ye

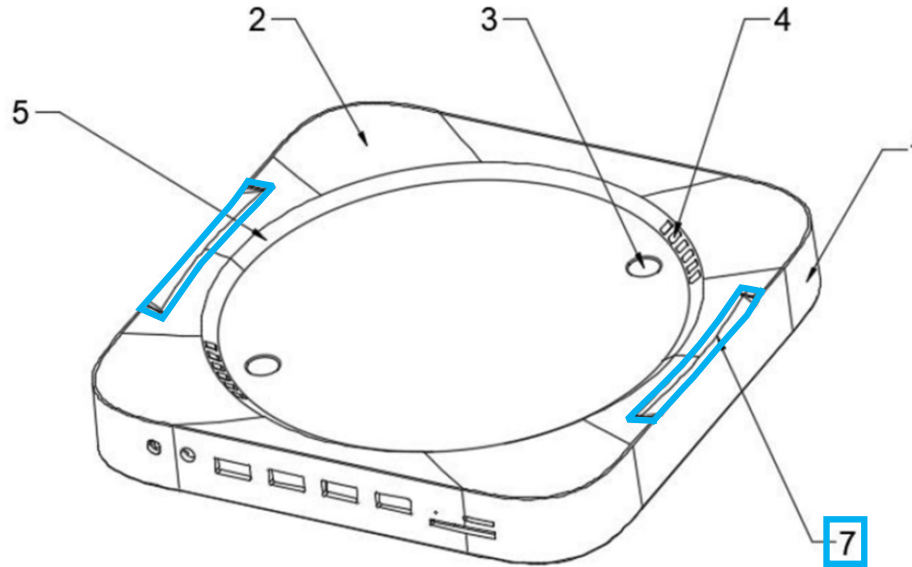
73. Therefore, it is my opinion that Ye teaches each and every limitation of [1.2].

[1.3] wherein a back corner from the plurality of rounded corners of the mini-computer stand comprises a cutaway in top and side portions of the back corner that does not extend through a bottom side of the mini-computer stand, which is adapted to expose a corresponding back bottom portion of the mini-computer

through the cutaway when the mini-computer is placed on the top of the mini-computer stand.

74. As set forth in detail below, Ye in view of Apple, further in view of Koshiishi discloses [1.3].

75. Ye discloses that the base docking station has an exhaust port 7 at the connection between the top and side portions that does not extend through a bottom side of the base docking station. Specifically, Ye describes that “the connection between the top and side surfaces of the docking station body 1 is provided with an exhaust port 7. In the implementation process, a heat dissipation fan is installed inside the docking station body 1, and the air outlet 4 and the air inlet 6 will form a convective air path. Combined with the heat dissipation fan (as well as the space or gap left by the placement groove 21), the heat dissipation effect can be improved. The exhaust port 7 not only facilitates air intake and exhaust, but also helps to separate the host from the docking station body 1.” Ex. 1005, [0024], FIG. 1.



Annotated FIG. 1 of Ye

76. As shown in the annotated Figure 1 of Ye, this exhaust port 7 of Ye (shown in blue) is located at the transition in the top and side portions of the base docking station 1, which exposes a corresponding back bottom portion of the mini-computer when a mini-computer is placed on the top of the base docking station 1.

77. While Ye does not explicitly refer to a “back corner cutaway,” a POSITA would inherently understand the spatial relationships when mating the docking station with its intended device. Apple dictates that the Mac mini M4 features a power button located on its bottom rear-left corner. Ex. 1006, p. 2. Because a Mac mini has a designated front and back orientation, a POSITA placing it on Ye’s docking station would naturally align the station’s geometry to establish a corresponding front and back. Consequently, the docking station’s plurality of

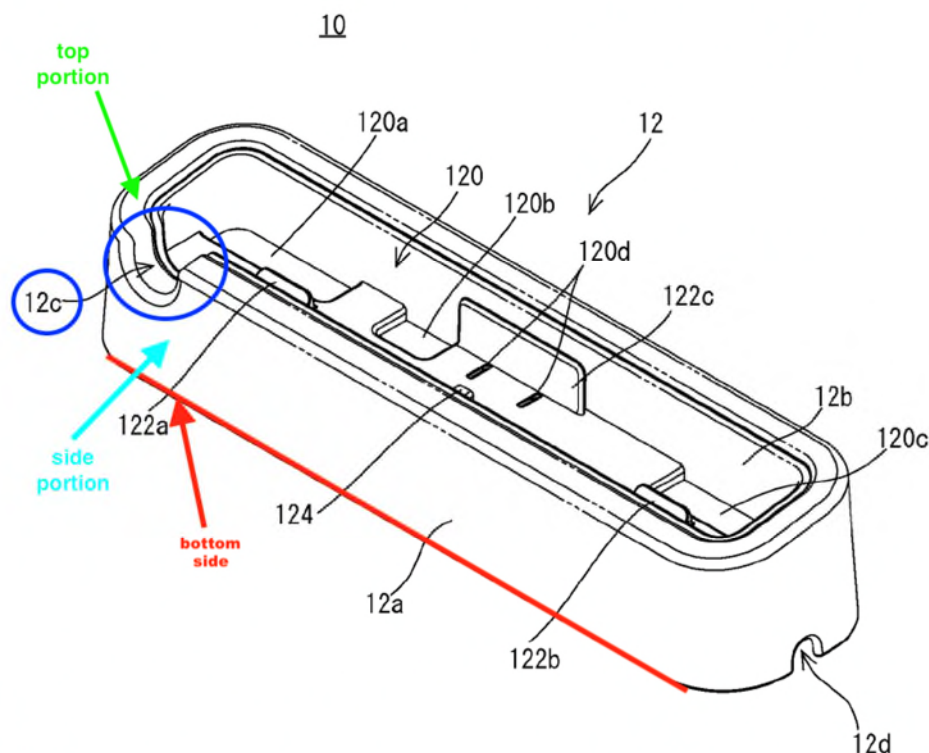
rounded corners will inherently include two back corners that align directly with the rear corners of the Mac mini.



Annotated Figure of Apple

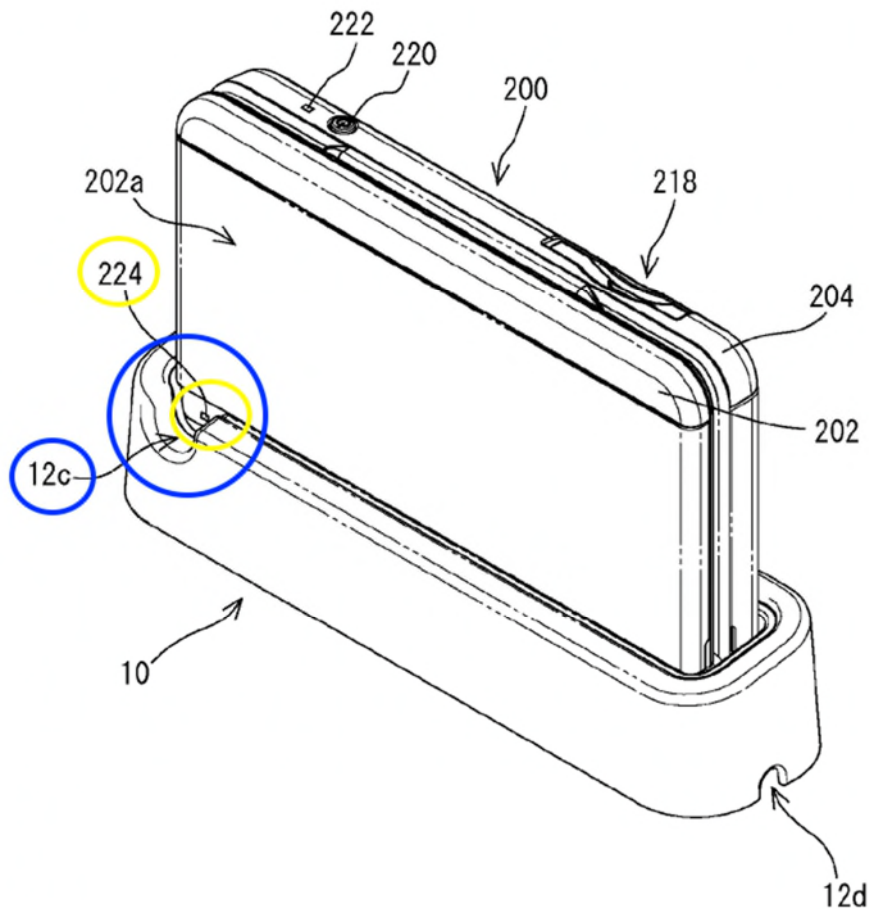
78. Ye explicitly states that its “docking station for a host is adapted to an MAC mini.” Ex. 1005, [0023]. A POSITA designing for the Apple ecosystem would therefore naturally look to pair Ye’s base with the Mac mini M4. However, doing so creates an immediate mechanical conflict: placing the Mac mini M4 onto Ye’s unmodified base would physically obstruct the bottom rear-left power button. Any competent hardware designer would recognize this accessibility issue and would inherently be driven to modify the docking station to provide a dedicated access feature for the power button.

79. In addition, Koshiishi discloses a known access structure, i.e., a notch 12c that is formed in the upper left of the charging stand. The notch 12c of Koshiishi spans the top and side portions of the stand without extending through a bottom side of the stand. When the mini-computer is placed on the top of the stand, the notch 12c of Koshiishi is adapted to expose an underlying feature of the mini-computer. “As seen from FIG. 1, FIG. 2(A) and FIG. 3(A), a notch 12c of a semi-circle shape is formed in upper left of the main body 12 (the outer side member 12 a and the inner side member 12 b) in the front of the charging stand 10.” Ex. 1007, 5:57-60.



Annotated FIG. 1 of Koshiishi

80. Furthermore, Koshiishi discloses that “the communication lamp 224 provided on the hinge 206 is arranged at a position that the notch 12c is provided. Therefore, even if the portable game apparatus 200 is being charged, it is possible to see the lighting, putting out light, blinking and the color of lighting (luminescence) of the communication lamp 224.” Ex. 1007, 11:23-28, FIG. 6(A). That is, the notch 12c of Koshiishi exposes underlying features of the electronic device.



Annotated FIG. 6(A) of Koshiishi

81. There was a recognized need and market demand in the relevant field to modify the base docking station of Ye to include a corner cutaway because, as established by the Apple reference, the Mac mini M4 features a bottom-mounted power button that would otherwise be obstructed. A POSITA would have recognized that the peripheral clearance techniques taught by Koshiishi could be used with the base docking station of Ye to resolve this physical obstruction. Koshiishi demonstrates that when a stand's walls block an underlying functional feature of a device, the standard mechanical solution is to remove material from the top and side portions of the stand's wall to expose that feature, without cutting all the way through the bottom.

82. There were a limited number of options for achieving the required function of providing physical access to the device's button, all of which were well known in the prior art. From an engineering perspective, modifying the stand to include a cutaway is not a product of hindsight, but a natural consequence of providing required physical access. When designing a stand that matches a device's footprint, as is standard practice to ensure a seamless fit, any physical features on the bottom or rear of the device, such as the Mac mini M4's power button, will inherently be blocked. To resolve this, some form of clearance or recess is required. It does not matter whether one calls it a gap, a notch, or a cutaway, the structure is entirely functionally driven. This

modification is a predictable use of prior art elements according to their established functions. Because this functional necessity dictates the design, creating this clearance is a highly predictable variation.

83. It would have been routine for a POSITA to modify these references to include this specific cutaway geometry. A POSITA would recognize that to expose the corresponding back bottom portion of the mini-computer, they must remove material in the top and side portions of the stand's back corner. Furthermore, it was common knowledge to POSITAs that they would specifically ensure this cutaway does not extend through the bottom side, as maintaining a solid base is necessary to preserve the stand's structural integrity and weight-bearing function. Arriving at this specific configuration is a standard, functionally necessary design choice, not a leap of innovation.

84. Therefore, utilizing the peripheral cutaway technique demonstrated in Koshiishi to resolve the physical obstruction problem in Ye's Mac mini docking station represents a standard, functionally necessary design choice. This engineering integration directly yields the structural arrangement of [1.3].

85. Therefore, it is my opinion that a POSITA would have been motivated to modify Ye in view of Apple, and further in view of Koshiishi, and would have had a reasonable expectation of success in doing so, thus reaching the

combination of Ye, Apple, and Koshiishi that teaches each and every limitation of [1.3].

86. Therefore, as shown above, claim 1 would have been obvious in light of Ye, Apple, and Koshiishi.

Claim 2

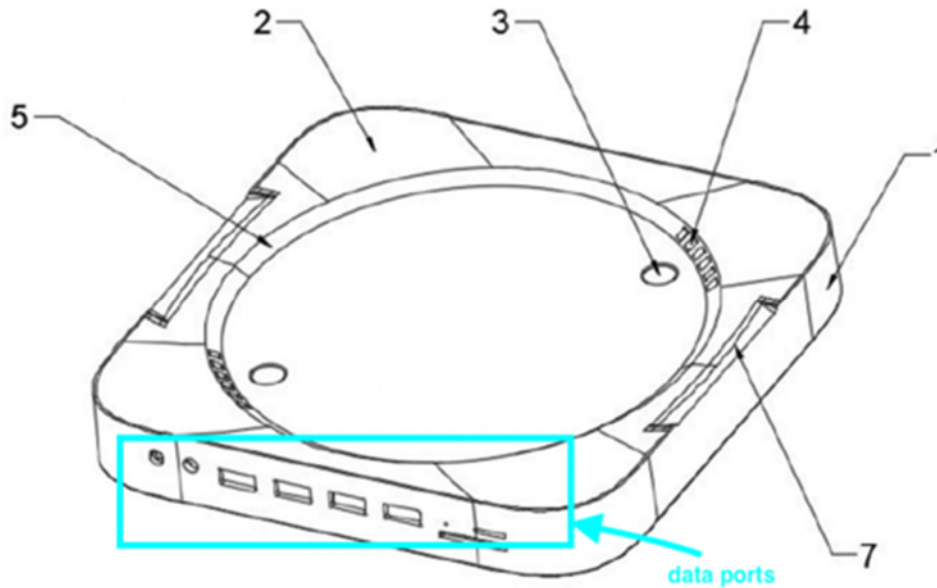
***[2.0] The mini-computer stand of claim 1, further comprising
[2.1] data ports on a front side of the mini-computer stand to form a hub, wherein the front side is opposite a back side of the mini-computer stand that includes the back corner.***

87. As explained above with respect to [1.0]-[1.3] in §IV.A.4, Ye in view of Apple, further in view of Koshiishi teaches [2.0]. Furthermore, as explained in sections below, Ye teaches [2.1].

88. Specifically, Ye discloses that “[t]he side surface of the docking station body 1 has multiple interfaces, such as PD interface, TF/SD card interface, USB interface, power interface, etc., and corresponding indicator lights can also be provided.” Ex. 1005, [0027], FIG. 1.

89. As shown in the following Figure 1 of Ye, because a Mac mini has a designated back side, a POSITA would understand that the base docking station of Ye correspondingly has a front side and a back side when a Mac mini is placed on top of it. When the front side of base docking station 1 aligns with the front side of the Mac mini, these various interfaces of Ye are positioned on the

front side of the base docking station 1 to form a hub, and the front side is opposite a back side of the base docking station that includes a back corner.



Annotated FIG. 1 of Ye

90. Therefore, it is my opinion that Ye teaches each and every limitation of [2.1].

91. Therefore, as shown above, claim 2 would have been obvious in light of Ye, Apple, and Koshiishi.

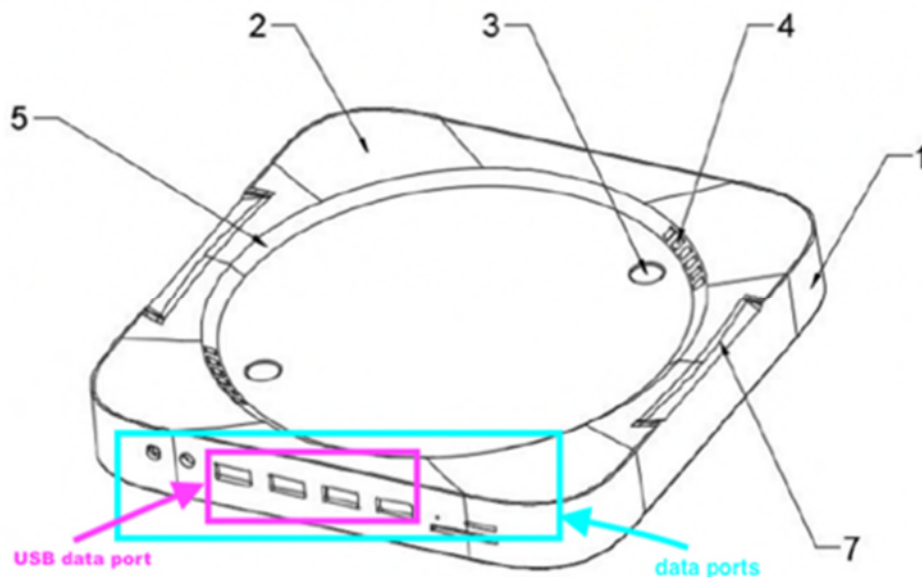
Claim 3

[3.0] The mini-computer stand of claim 2,

[3.1] wherein the front side of the mini-computer stand comprises a USB data port.

92. As explained above with respect to [2.0]-[2.1] in §IV.A.4, Ye in view of Apple, further in view of Koshiishi teaches [3.0]. Furthermore, as explained in sections below, Ye teaches [3.1].

93. Specifically, Ye discloses that “[t]he side surface of the docking station body 1 has multiple interfaces, such as PD interface, TF/SD card interface, USB interface, power interface, etc., and corresponding indicator lights can also be provided.” Ex. 1005, [0027], FIG. 1. That is, Ye discloses that the various interfaces positioned on the front side of the base docking station 1 include USB data ports.



Annotated FIG. 1 of Ye

94. Therefore, it is my opinion that Ye teaches each and every limitation of [3.1].

95. Therefore, as shown above, claim 3 would have been obvious in light of Ye, Apple, and Koshiishi.

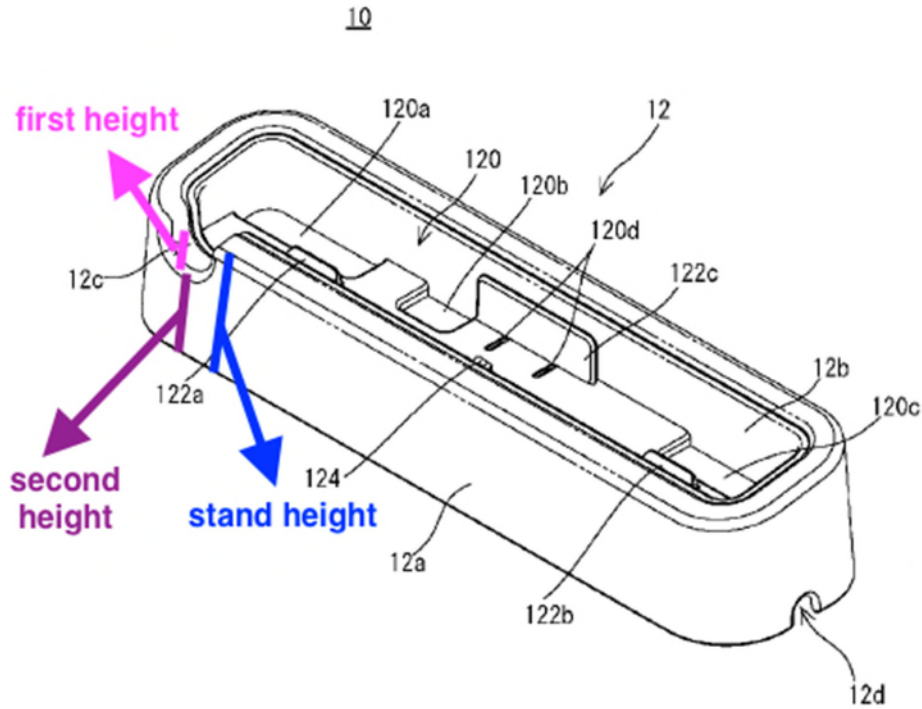
Claim 5

[5.0] The mini-computer stand of claim 1,

[5.1] wherein: the back corner has a) a first height that defines a beginning of the cutaway in the side portions and b) a second height that defines an end of the cutaway in the side portions; the mini-computer stand has a stand height that is a sum of the first height and the second height; and the second height is greater than the first height.

96. As explained above with respect to [1.0]-[1.3] in §IV.A.4, Ye in view of Apple, further in view of Koshiishi teaches [5.0]. Furthermore, as explained in sections below, Koshiishi teaches [5.1].

97. Specifically, as shown in the following Figure 1 of Koshiishi, the charging stand has a) a first height (shown in pink) that defines a beginning of the cutaway in the side portions and b) a second height (shown in purple) that defines an end of the cutaway in the side portions. The stand height (shown in blue) of the charging stand is a sum of the first height and the second height and the second height is greater than the first height. Ex. 1007, FIG. 1.



Annotated FIG. 1 of Koshiishi

98. The cutaway geometry taught by Koshiishi inherently satisfies these relative height dimensions. As illustrated in Koshiishi's FIG. 1, the charging stand's wall utilizes a partial-depth notch (12c). From a geometric standpoint, this notch structure establishes a first height (the depth of the notch from the top edge) and a second height (the remaining solid material below the notch). Because the notch is formed in the upper portion of the wall to expose the device's communication lamp (224), while leaving a substantial solid base below to support the device and maintain structural integrity, the second height is naturally greater than the first height. The overall stand height is simply the sum of these two dimensions.

99. Therefore, it is my opinion that Koshiishi teaches each and every limitation of [5.1].

100. Therefore, as shown above, claim 5 would have been obvious in light of Ye, Apple, and Koshiishi.

Claim 6

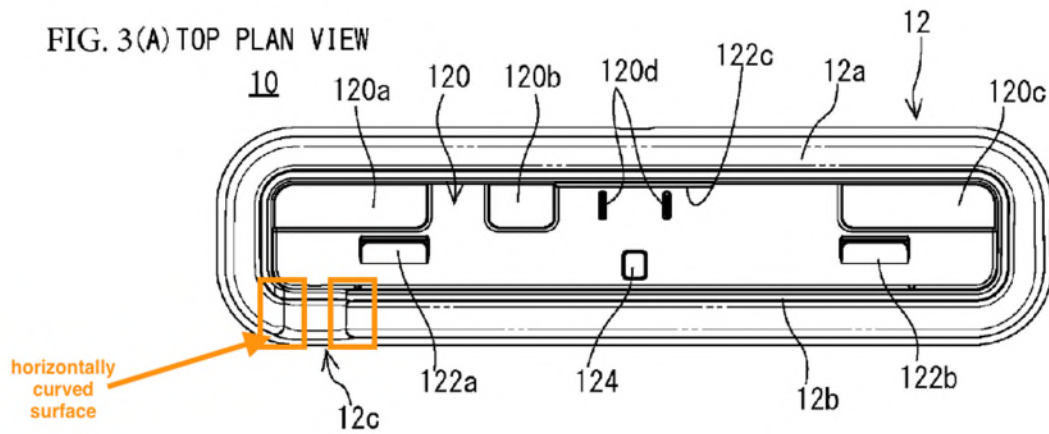
[6.0] The mini-computer stand of claim 1,”

[6.1] wherein the back corner comprises a horizontally curved surface that defines the cutaway in the top and the side portions of the back corner.

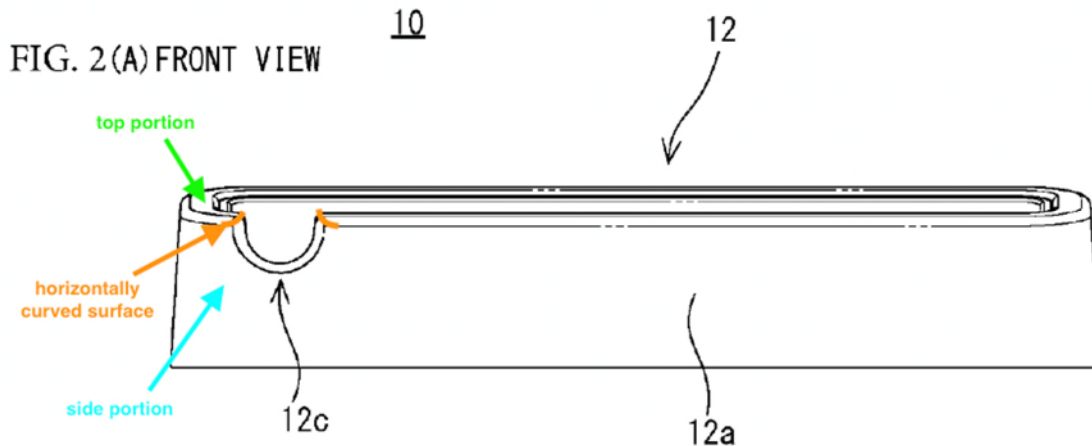
101. As detailed in §IV.I below, it is my opinion that the term “horizontally curved surface” in Claim 6 is indefinite because it fails to inform a POSITA of the claim scope with reasonable certainty. To the extent that the term is amenable to any construction that may save the claim from indefiniteness, it is my opinion that Koshiishi discloses this feature under any such reasonable interpretation.

102. As explained above with respect to [1.0]-[1.3] in §IV.A.4, Ye in view of Apple, further in view of Koshiishi teaches [6.0]. Furthermore, as explained in sections below, Koshiishi teaches [6.1].

103. Specifically, as shown in the following Figures 2(A) and 3(A) of Koshiishi, Koshiishi discloses that the charging stand has a horizontally curved surface that defines the notch 12c in the top and the side portions. Ex. 1007, FIG. 3(A).



Annotated FIG. 3(A) of Koshiishi



Annotated FIG. 2(A) of Koshiishi

104. Therefore, it is my opinion that Koshiishi teaches each and every limitation of [6.1].

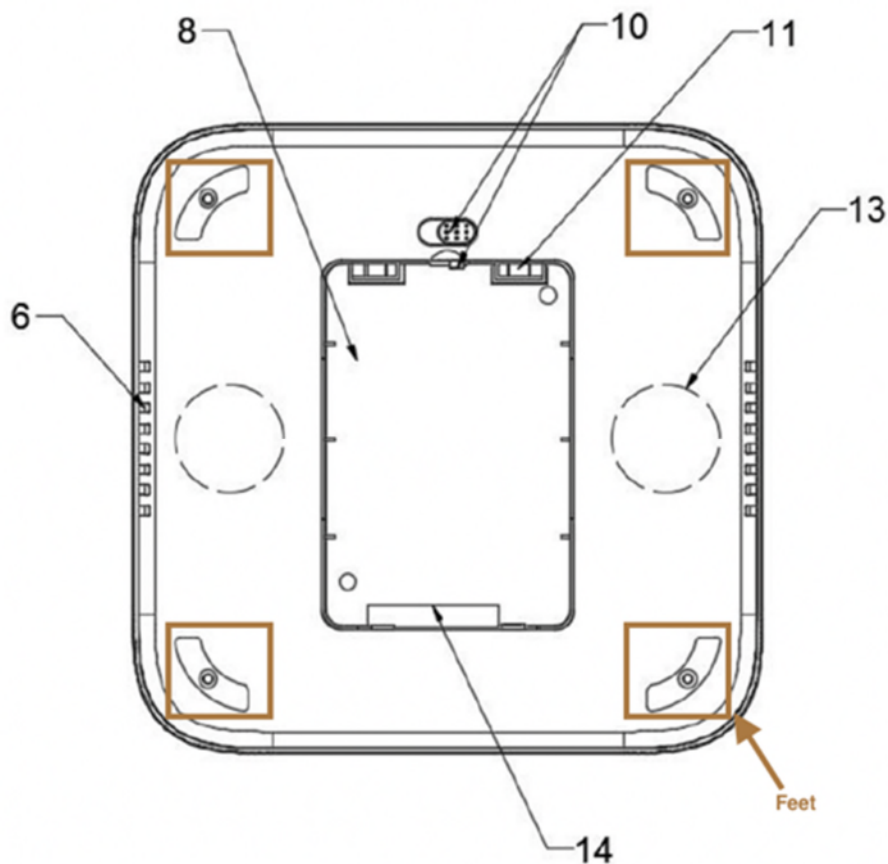
105. Therefore, as shown above, claim 6 would have been obvious in light of Ye, Apple, and Koshiishi.

Claim 7

[7.0] The mini-computer stand of claim 1, further comprising
[7.1] a plurality of feet coupled to the bottom side of the mini-computer stand that is opposite the top.

106. As explained above with respect to [1.0]-[1.3] in §IV.A.4, Ye in view of Apple, further in view of Koshiishi teaches [7.0]. Furthermore, as explained in sections below, Ye teaches [7.1].

107. Specifically, as shown in the following Figure 2 of Ye, Ye discloses a plurality of feet (shown in brown) coupled to the bottom side of the base docking station 1 that is opposite the top. Ex. 1005, FIG. 2.



Annotated FIG. 2 of Ye

108. Therefore, it is my opinion that Ye teaches each and every limitation of [7.1].

109. Therefore, as shown above, claim 7 would have been obvious in light of Ye, Apple, and Koshiishi.

5. Combination of Ye, Apple, and Koshiishi

110. As discussed above with respect to §IV.A.1-4 and for the reasons provided below, a POSITA would have been motivated to combine Ye with Apple, and Koshiishi based on design incentives, market dynamics, and the predictable use of known structural solutions to resolve a known problem.

111. As established above, Ye, Apple, and Koshiishi are analogous art because they are from the same field of endeavor, i.e., support structures and accessories for mini-computers and electronic devices. At the very least, each of them addresses the problem of accessing underlying structural device features within a stand.

112. Ye discloses a base docking station specifically configured for the MAC mini. Ex. 1005. Apple discloses the Mac Mini M4, which was unveiled on October 29, 2024, having a power button located on its bottom rear left corner. Ex. 1006. To place the Mac mini M4 of Apple onto the base docking station of Ye, a POSITA would immediately recognize a functional conflict, i.e., the docking station would block access to the power button.

113. On October 29 and 30, 2024, public forums disclosed that users “can’t put a dock below the mini because of the power button” and realized that “[i]t

would be trivial to put a recess in that corner to accommodate a finger.” Ex. 1011, pp. 2, 7. This is contemporaneous evidence that the public and POSITAs immediately recognized the accessibility problem and its structural solution, as well as that a clear, predictable variation was driven by market-driven design needs.

114. To address the recognized need in the relevant field to provide physical access to a bottom-mounted button, a POSITA would look to known access structures in the same field of endeavor to implement this “trivial” recess. Koshiishi discloses providing a notch or cutaway in the periphery of a charging stand to expose underlying device features, i.e., a light-emitting portion. Ex. 1007, 11:23-28, FIG. 6(A). A POSITA, as a person of ordinary creativity, would readily recognize that the peripheral cutaway of Koshiishi is readily transferable to any stand that needs to preserve physical or visual access to an underlying device feature. By implementing the method of providing a cutaway in the top and side portions that does not extend through the bottom disclosed in Koshiishi to the base docking station of Ye, this modification represents the application of a known technique to a known device ready for improvement.

115. In addition, a POSITA would not be discouraged by the fact that Ye discloses a flat stacking-style dock while Koshiishi discloses an insertion-style stand holding a device vertically. I have been informed by Counsel that the test

for obviousness is not whether the structures of two references can be bodily incorporated into one another, but whether a POSITA would be motivated to apply the teachings of the secondary reference to the primary one. Here, as shown in Figure 2(A) of Koshiishi, there is a clear suggestion in Koshiishi to modify a peripheral wall to include a partial-depth notch 12c on an upper peripheral edge to allow user to access an obstructed underlying structural feature, which does not extend through the bottom side of the stand. A POSITA would readily understand that this localized access technique is orientation-agnostic and would have been motivated to apply it to the upper back corner of the flat base docking station of Ye to accommodate the Mac mini M4's power button, yielding the claimed structure.

116. In fact, there were a limited number of predictable options for achieving the function of preserving user access to features located on the bottom of that device, especially when Apple discloses a fixed location of power button in Mac mini M4 and the stand is sized to substantially conform to the footprint of that device. The stand necessarily must include an access feature at a fixed location, i.e., the back corner, that creates sufficient access space. Whether that feature is described as a gap, cutaway, recess, or notch does not change its underlying engineering purpose. Because the inclusion of such a feature is dictated by the functional requirement of maintaining access, this modification is a predictable

use of prior art elements according to their established functions, making its use a predictable design choice to a POSITA.

117. It would have been routine for a POSITA to modify the base docking station of Ye to include this cutaway. Implementing the notch 12c of Koshiishi to the base docking station of Ye would have been a localized, shallow, and non-disruptive change rather than a substantial redesign. Ye already discloses a base docking station with a placement surface for supporting the computer, a placement groove, internal cooling components, and airflow features such as air inlets, air outlets, and exhaust port 7 located at the junction of the top and side surfaces. It was common knowledge to a POSITA that providing finger access to a bottom rear power button would require only a limited relief at the relevant corner, which is just enough material removal to create access without extending deeply into the body of the base docking station or altering the principal internal components. Because the modification would be confined to a corner region and would not require elimination of the placement surface, the central support area, or the basic internal arrangement disclosed in Ye, it would not be expected to interfere materially with the internal structure or compromise the overall support function of the base docking station of Ye.

118. Thus, a POSITA would have had a reasonable expectation of success in modifying the base docking station of Ye with the notch 12c of Koshiishi, as

doing so requires only standard manufacturing techniques and does not alter the primary supporting function of the base docking station of Ye. Accordingly, this predictable modification with known technique yields the expected result of maintaining device support while allowing user access to the power button.

B. GROUND 2: Claims 2 and 8 of the '567 Patent are rendered obvious by Ye, Apple, Koshiishi, and Satechi

1. Overview of Satechi

119. Satechi discloses a “Type-C Aluminum Stand & Hub – USB-C Data Port, Micro/SD Card Readers, USB 3.0 & Headphone Jack Port - Compatible with Mac Mini (2018 & Later)” configured to support a mini-computer, i.e., a Mac mini, which has a square perimeter with rounded corners. Ex. 1008, p. 3.



Annotated Figure of Satechi



Annotated Figure of Satechi

120. I understand that Satechi was sufficiently available to persons interested in the relevant art at least as early as October 7, 2019 because Satechi discloses a “Date first listed on Amazon” of October 7, 2019. In addition, Satechi is Wayback Machine capture of the original website. The URL of capture includes the URL of the original website and a time stamp “20200313192257,” which indicates the year, month, day, hour, minute, and second the capture was made. Ex. 1008.

121. Moreover, Satechi includes multiple verified customer reviews dated well before the Critical Date. Ex. 1008, pp. 5, 8. These pre-critical-date reviews explicitly include contemporaneous user-uploaded photographs of the product, which provide sufficient, corroborated evidence that the specific design and

features disclosed in Satechi were publicly known and available prior to the Critical Date.

122. I have examined Satechi's Type-C Aluminum Stand & Hub. This reference represents a highly conventional accessory architecture in our industry: an integrated stand and data hub built specifically for the Mac mini. From a product architecture standpoint, Satechi teaches two critical design choices.

123. First, Satechi utilizes a 1:1 footprint match. The stand is designed with a square perimeter and rounded corners that are substantially the exact same size as the Mac mini itself, allowing the stand to act as a seamless, structural extension of the computer. Second, it consolidates data connectivity by placing multiple I/O ports (USB-C, USB 3.0, SD readers, audio) entirely on the user-facing front side of the stand, directly opposite the rear corner. This is a standard industry technique to reduce wire clutter and ensure users can easily plug in peripherals without reaching behind the machine.

124. It is my opinion that Satechi device is analogous to the claimed invention because it is in the same field of endeavor as claimed invention of the '567 Patent. The '567 Patent focuses on designing "a stand for use with a mini-computer." Ex. 1001 at Abstract, Claim 1, and 1:14-17. Similarly, Satechi is directed toward engineering a stand or hub specifically compatible with the Mac Mini. Ex. 1008, p. 1. Because both documents are expressly concerned with the mechanical design of stands and hub accessories built to support and interface with mini-

computers, a POSITA developing the stand in the '567 Patent would naturally consider Satechi's device as part of their direct design space.

2. Analysis

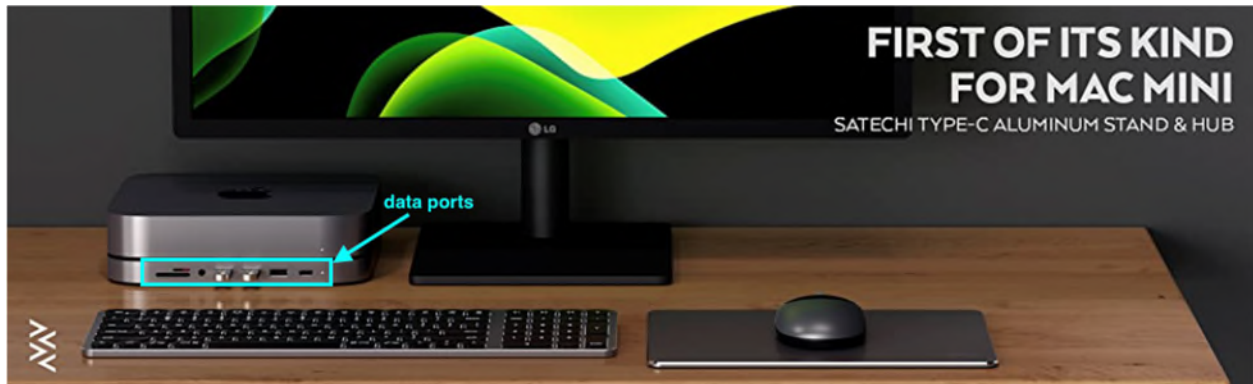
Claim 2

***[2.0] The mini-computer stand of claim 1, further comprising
[2.1] data ports on a front side of the mini-computer stand to form a hub, wherein the front side is opposite a back side of the mini-computer stand that includes the back corner.***

125. As explained above with respect to [1.0]-[1.3] in §IV.A.4, Ye in view of Apple and Koshiishi, further in view of Satechi teaches [2.0]. Furthermore, as explained in section below, Satechi teaches [2.1].

126. Satechi discloses a stand compatible with Mac Mini having data ports on the front side of the stand. Ex. 1008, p. 1. Specifically, Satechi discloses that the stand “features an USB-C data port, three USB 3.0 ports, micro/SD card readers, and a 3.5 mm headphone jack port for convenient access to your essential peripherals.” Ex. 1008, p. 3. As shown in the following figure, to make it easier for users to access the data ports when the mini-computer is placed onto the stand, the data ports are positioned on the user-facing front side. Ex. 1008, p. 2. A POSITA would understand that this user-facing front side opposes a back side of the stand, which includes a back corner corresponding to a back bottom portion of the mini-computer. For instance, Satechi discloses a stand

where the data ports are located on the user-facing front side, in opposition to the back side that corresponds with the back side of the mini-computer.



Annotated Figure of Satechi

127. A POSITA would have recognized that the front-facing data ports taught by Satechi could improve the adapter of Liao. Specifically, a POSITA would have been motivated to implement the data ports of Satechi in the base docking station of Ye, so that the users can easily access the data ports when the Mac mini M4 is placed on the base docking station of Ye. It would have been routine for a POSITA to modify the adapter of Liao to integrate I/O functionality into the base docking station of Ye is a product architecture choice with well-understood benefits. Such a configuration makes effective use of the base docking station's physical volume, places ports in a convenient user-facing location, and helps organize cables by centralizing external connections at the support stand structure. This a routine combination of known elements performing their ordinary functions without modification, i.e., the base supports the device, and the data ports provide connectivity. Because each element

operates as expected and the resulting advantages are well understood, a POSITA would have had a reasonable expectation of success in implementing this predictable and routine design choice for a POSITA.

128. Therefore, it is my opinion that a POSITA would have been motivated to modify Ye, Apple, and Koshiishi by using the data ports of Satechi, and thus reach the combination of Ye, Apple, Koshiishi and Satechi that teaches each and every limitation of [2.1].

129. Therefore, as shown above, claim 2 would have been obvious in light of Ye, Apple, Koshiishi, and Satechi.

Claim 8

[8.0] A computer system comprising the mini-computer and the mini-computer stand of claim 1,

[8.1] wherein the mini-computer comprises the perimeter that is square with rounded corners, further wherein the perimeters of the mini-computer and the mini-computer stand are substantially the same size so that when placed on the mini-computer stand, the mini-computer stand enables access to the back bottom portion of the mini-computer through the cutaway.

130. As explained above with respect to [1.0]-[1.3] in §IV.A.4, Ye in view of Apple and Koshiishi teaches [8.0]. Furthermore, as explained in section below, Satechi teaches [8.1].

131. Apple discloses the Mac Mini M4, i.e., a mini-computer that has the perimeter that is square with rounded corners. Ex. 1006.



Annotated Figure of Apple

132. In addition, a POSITA would have been motivated to design the perimeter of the base docking station of Ye for supporting Mac mini as substantially the same size as the perimeter of the Mac mini, such that when placing the Mac mini on the base docking station of Ye, the base docking station of Ye seamlessly supports and extends from the bottom of the Mac mini.

133. Satechi discloses Mac mini, a mini-computer with a perimeter that is square with rounded corners, and a stand or hub that is “[d]esigned to feel like a natural extension of your Mac Mini with an elegant brushed finish and matching space gray aluminum alloy.” That is, Satechi discloses that the perimeters of the mini-computer and the mini-computer stand are substantially the same size. Ex. 1008, p. 3.



Annotated Figure of Satechi



Annotated Figure of Satechi

134. As discussed above, where a stand is substantially the same size as the perimeter of the Mac Mini M4, yet must also preserve user access to power button located on the bottom of the Mac Mini M4, the stand necessarily must include an access feature that creates sufficient access space. Because the inclusion of such a feature is dictated by the functional requirement of maintaining access, its use would have been a predictable design choice to a POSITA.

135. Therefore, it is my opinion that a POSITA would have been motivated to modify Ye, Apple, and Koshiishi by implementing the perimeters of Satechi, and thus reach the combination of Ye, Apple, Koshiishi and Satechi that teaches each and every limitation of [8.1].

136. Therefore, as shown above, claim 8 would have been obvious in light of Ye, Apple, Koshiishi, and Satechi.

3. Combination of Ye, Apple, Koshiishi, and Satechi

137. As explained above with respect to [1.0]-[1.3] in §IV.A, the combination of Ye, Apple, and Koshiishi renders independent claim 1 obvious by addressing the physical accessibility of the Mac mini M4's power button. Dependent claims 2 and 8 introduce routine utility and design enhancements, i.e., strategic data port placement and precise footprint sizing. To the extent the combination

of Ye, Apple, and Koshiishi does not explicitly detail these limitations, a POSITA would have been motivated to incorporate the teachings of Satechi.

138. Satechi discloses the well-known industry solution of placing data ports on a user-facing front side of the stand, opposite the back side comprising a back corner, to provide easier access when the device is placed on the stand. Satechi also discloses designing the perimeter of the stand to be substantially the same size as the mini-computer to provide a seamless, aligned support.

139. A POSITA would have recognized that the front-facing data ports and substantially same-sized perimeter taught by Satechi could improve the base docking station of Ye. A POSITA, as a person of ordinary creativity, would understand that the base docking station of Ye is ready for improvement and would have been motivated to integrate Satechi's teachings to enhance aesthetic alignment and user accessibility. It would have been routine for a POSITA to modify the docking station of Ye to include these features. Because placing data ports and matching device perimeters are routine techniques that do not alter the primary supporting function of the base docking station of Ye, a POSITA would have had a reasonable expectation of success in implementing this modification. This modification is a predictable use of prior art elements according to their established functions. Specifically, this combination is a straightforward arrangement of known elements that yields the predictable

result of a more convenient, aesthetically pleasing mini-computer hub where users can easily and seamlessly access the data ports.

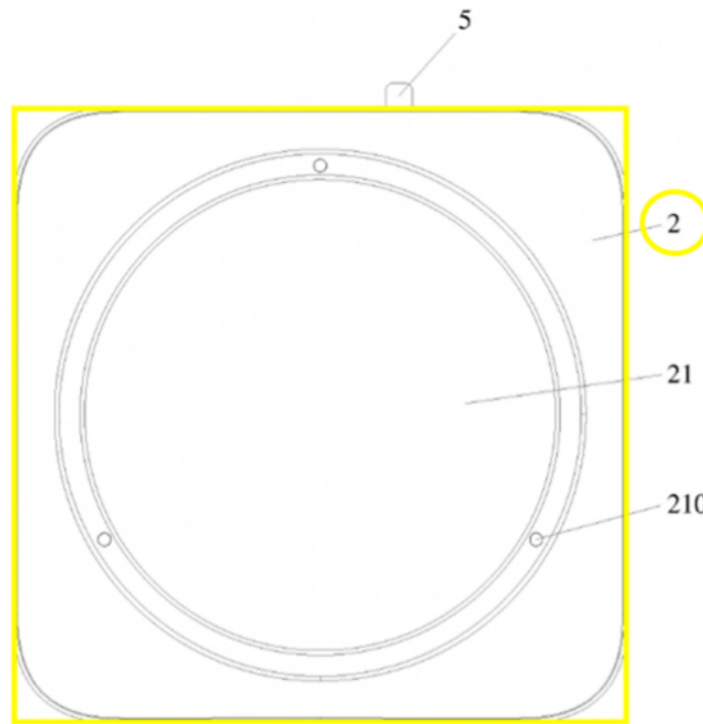
C. GROUND 3: Claim 4 of the '567 Patent is rendered obvious by Ye, Apple, Koshiishi, and Liao

1. Overview of Liao

140. I understand that Liao was published on June 11, 2020.

141. Liao discloses an adapter compatible with Mac mini, which has a perimeter that is square with rounded corners. Ex. 1010, FIG. 2.

142. As shown in the following Figure 2 of Liao, “the base 1 has a square structure with four first rounded corners 14. The upper end of the base 1 is an opening, and the upper cover 2 can cooperate with the base 1 to cover the opening. The upper cover 2 has the second rounded corners 22 that match the corresponding first rounded corners 14. The adapter with this structure is compatible with electronic devices, especially with the size of Mac Mini. The adapter supporting the Mac Mini is aesthetically pleasing. The adapter is designed with rounded corners to prevent right angles from scratching the user and improve safety during use.” Ex. 1010, [0051], FIG. 2.



Annotated FIG. 2 of Liao

143. My review of Liao shows an adapter base designed to support electronic devices, explicitly citing the Mac mini as its primary application. Ex. 1010, [0044]. Like Satechi, Liao utilizes a square base structure with rounded corners that aesthetically and structurally matches the target device.

144. Technically, Liao solves the problem of connecting multiple peripherals by utilizing a distributed port architecture. Rather than limiting data ports to a single face, Liao teaches placing data ports on both the front side and the opposite back side of the adapter to form a comprehensive hub. Ex. 1010, FIGS. 3, 4. This configuration is a known engineering choice to maximize available surface area, separate permanent cable connections (like power or display) on the back from temporary connections (like thumb drives) on the front, and provide a direct link

to the computer's native rear ports. Liao also highlights the use of anti-slip rubber feet on the bottom of the base to provide friction and prevent liquid ingress. Ex. 1010, [0049].

145. It is my opinion that the adapter described in Liao is analogous to the claimed invention because it is in the same field of endeavor as the claimed invention in the '567 Patent. The '567 Patent focuses on designing "a stand for use with a mini-computer." Ex. 1001, 1:14-17, Claim 1. Similarly, Liao is directed toward engineering "adapters suitable for this Mac Mini electronic product." Ex. 1010, [0044]. Because both documents are expressly concerned with the mechanical design of support structures and adapters built to interface with mini-computers, a POSITA developing the stand in the '567 Patent would naturally consider the adapter in Liao as part of their direct design space.

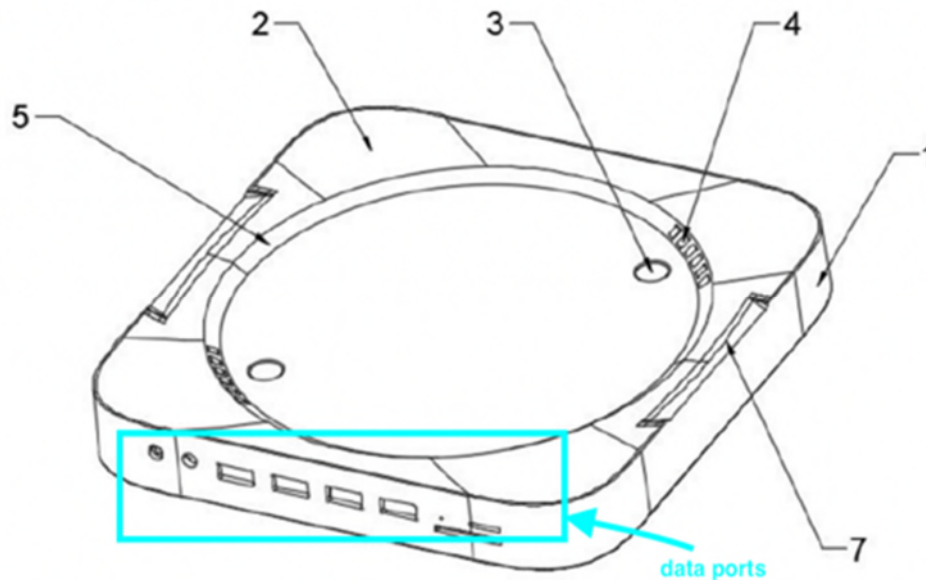
2. Analysis

Claim 4

***[4.0] The mini-computer stand of claim 1, further comprising
[4.1] a front side and an opposite back side that includes the back corner; and a data port on the front side and another data port on the back side of the mini-computer stand to form a hub."***

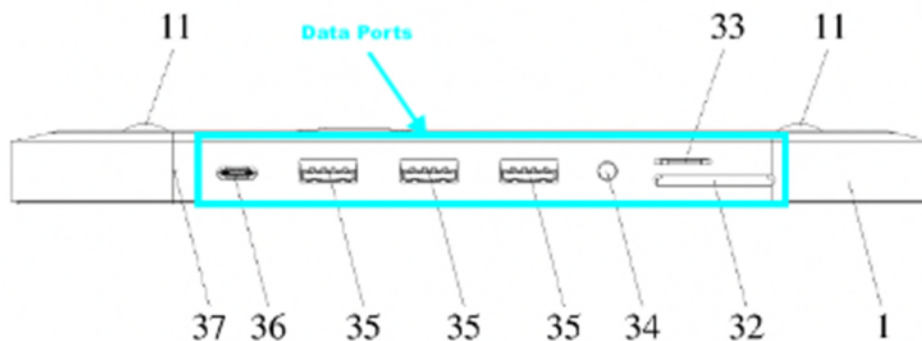
146. As explained above with respect to [1.0]-[1.3] in §IV.A.4, Ye in view of Apple and Koshiishi teaches [4.0]. Furthermore, as explained in section below, Liao teaches [4.1].

147. As discussed above, Ye discloses a base docking station having a front side and an opposite back side that includes a back corner, and that the base docking station includes data ports on the front side. Ex. 1005, FIG. 1.

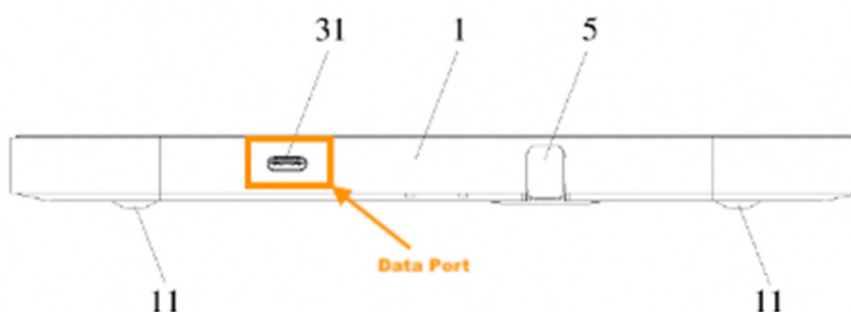


Annotated FIG. 1 of Ye

148. Liao discloses a Mac mini adapter for supporting a Mac mini, which has a front side and an opposite back side that includes the back corner. In addition, Liao discloses a data port on the front side and another data port on the back side of the mini-computer stand to form a hub. Ex. 1010, [0044]. As shown in the following Figures 3 and 4 of Liao, Liao discloses that the Mac mini adapter includes data ports on both the front side and the back side that are opposite to each other. Ex. 1010, FIGS. 3, 4.



Annotated FIG. 4 of Liao



Annotated FIG. 3 of Liao

149. A POSITA would have recognized that the data port arrangement of Liao could improve the base docking station of Ye. Specifically, to provide additional available surface area and enable more flexible and spacious data port placement, a POSITA would have been motivated to implement the data ports of Liao in the base docking station of Ye. It would have been routine for a POSITA to modify Ye's docking station to include these rear-facing ports. This modification is a predictable use of prior art elements according to their established functions, as it merely places standard connectivity interfaces in a functionally advantageous location. Implementing this predictable modification would have allowed the stand to be directly connected to the interfaces on the

rear side of the Mac mini, yielding the predictable results of minimizing cable clutter and enhancing overall ease of use.

150. Therefore, it is my opinion that a POSITA would have been motivated to modify Ye, Apple, and Koshiishi by implementing the data ports of Liao, and thus reach the combination of Ye, Apple, Koshiishi and Liao that teaches each and every limitation of [4.1].

151. Therefore, as shown above, claim 4 would have been obvious in light of Ye, Apple, Koshiishi and Liao.

3. Combination of Ye, Apple, Koshiishi, and Liao

152. When modifying Ye's base docking station to accommodate the Mac mini M4, a POSITA would have been motivated to incorporate the distributed port teachings of Liao to feature data ports on both the front and back sides of the stand as recited in Claim 4.

153. As explained above with respect to [1.0]-[1.3] in §IV.A, adapting the base docking station of Ye for the Mac mini M4 requires structurally modifying a rear corner to enable power button access. Because this physical cutout limits the available internal volume and structural continuity of the base docking station, a POSITA would have recognized that the technical solution of Liao could optimize the placement of internal components and external data ports of the base docking station of Ye because distributing data ports on both the front

side and the opposite back side would maximize available surface area, alleviate wire clutter on the user-facing front side, and provide direct connection between the stand and device on the opposite back side.

154. There were a limited number of options for optimizing the placement of external data ports of the base docking station of Ye, all of which were well known in the prior art. Because relocating or adding standard data ports to a housing is a routine technique that does not alter the primary supporting function of the base docking station of Ye, this modification is a predictable use of prior art elements according to their established functions. A POSITA would have had a reasonable expectation of success in making this modification. Modifying the combination of Ye, Apple, and Koshiishi to include ports on both the front and rear sides of the base docking station, based on the teachings of Liao, represents a routine design choice that yields the predictable result.

D. GROUND 4: Claims 1-8 of the '567 Patent are rendered obvious by Liao, Apple, and Koshiishi

1. Analysis

Claim 1

[1.0] A mini-computer stand for use with a mini-computer that has a square perimeter with rounded corners, the mini-computer stand comprising:

155. To the extent the preamble is limiting, Liao discloses [1.0].

156. As discussed in §IV.C.1, Liao describes “adapters suitable for this Mac Mini electronic products” and that “[t]he adapter with this structure is

compatible with electronic devices, especially with the size of Mac Mini.” Ex. 1010, [0044], [0051]. As a POSITA working in this field, I recognize that all Apple MAC Mini models, including the MAC Mini M4 disclosed in Apple, utilize square perimeters with rounded corners.

157. As discussed in §IV.A.2, in the same field of endeavor, Apple discloses Mac Mini M4, i.e., a mini-computer that has a square perimeter with rounded corners. Ex. 1006, p. 2.



Annotated Figure of Apple

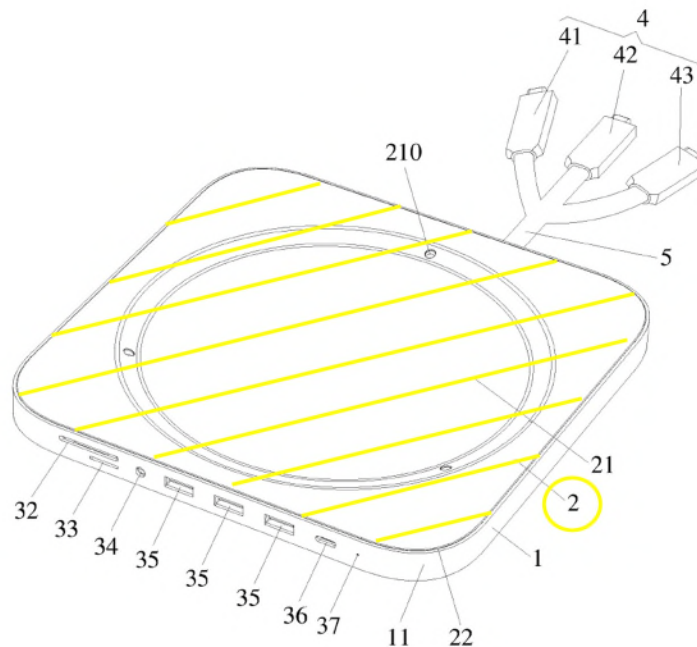
158. As discussed in §IV.A.3, in the same field of endeavor, Koshiishi discloses a charging stand for electronic device. Ex. 1007, 1:12-13.

[1.1] a top configured for placement of the mini-computer; and

159. As set forth in detail below, Liao discloses [1.1].

160. Specifically, Liao discloses an upper cover 2 “provided with a groove 21 that protrudes towards the bottom surface of the base 1 for supporting an electronic device.” Ex. 1010, FIG. 1, [0043].

161. As shown in the following Figure 1 of Liao, Liao discloses that “by providing a groove 21 on the upper cover 2, can effectively support electronic devices, especially for the Mac Mini. The bottom of the Mac Mini has a circular protrusion, and the groove 21 is designed in a bowl shape, which can form a good fit with the circular protrusion and stably support the Mac Mini.” Ex. 1010, FIG. 1, [0044].



Annotated FIG. 1 of Liao

162. To support Mac Mini, Liao relies on an upper cover (2) that features a supportive groove (21). Liao explicitly notes that the upper cover with the

supportive groove “can effectively support electronic devices, especially for the Mac Mini.” Ex. 1010, FIG. 1, [0044]. From a mechanical perspective, this upper cover (2) functions as the required top placement surface for the device.

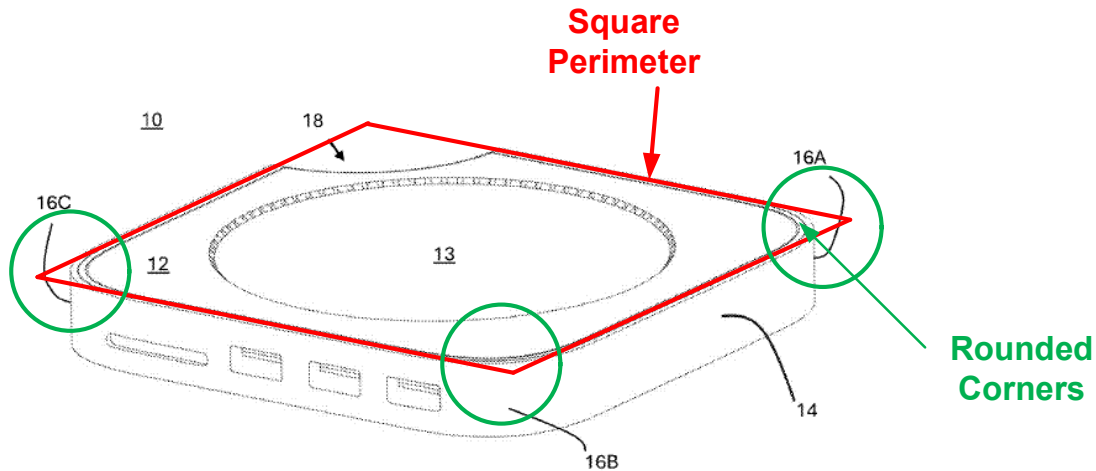
163. Therefore, it is my opinion that Liao teaches each and every limitation of [1.1].

[1.2] a perimeter that is square with a plurality of rounded corners,

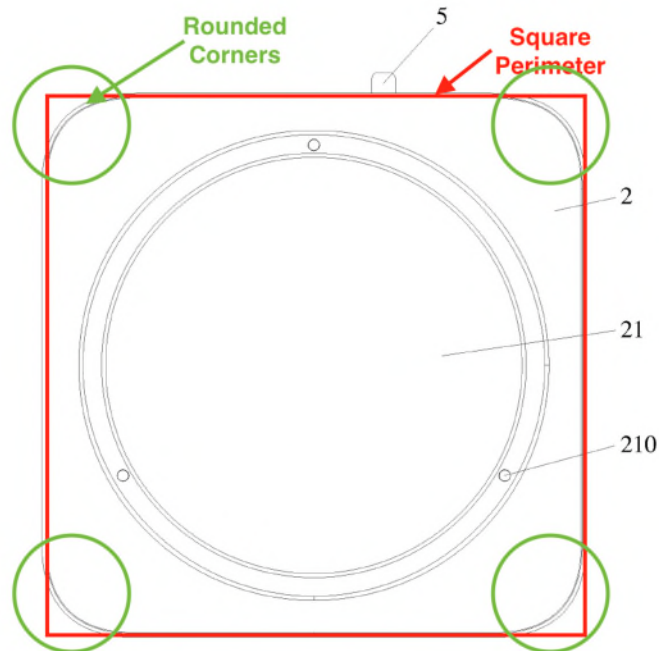
164. As set forth in detail below, Liao discloses [1.2].

165. Specifically, Liao discloses that “the base 1 has a square structure with four first rounded corners 14. The upper end of the base 1 is an opening, and the upper cover 2 can cooperate with the base 1 to cover the opening. The upper cover 2 has the second rounded corners 22 that match the corresponding first rounded corners 14. The adapter with this structure is compatible with electronic devices, especially with the size of Mac Mini. The adapter supporting the Mac Mini is aesthetically pleasing. The adapter is designed with rounded corners to prevent right angles from scratching the user and improve safety during use.” Ex. 1010, [0051].

166. In addition, as shown in the following Figure 2 of Liao, Liao discloses a base docking station, having a perimeter that is square (shown in red) with a plurality of rounded corners (shown in green).



Annotated FIG. 3A of the '567 Patent



Annotated FIG. 2 of Liao

167. Therefore, it is my opinion that Liao teaches each and every limitation of [1.2].

[1.3] wherein a back corner from the plurality of rounded corners of the mini-computer stand comprises a cutaway in top and side portions of the back corner that does not extend through a bottom side of the mini-computer stand, which is

adapted to expose a corresponding back bottom portion of the mini-computer through the cutaway when the mini-computer is placed on the top of the mini-computer stand.

168. As set forth in detail below, Liao in view of Apple, further in view of Koshiishi discloses [1.3].

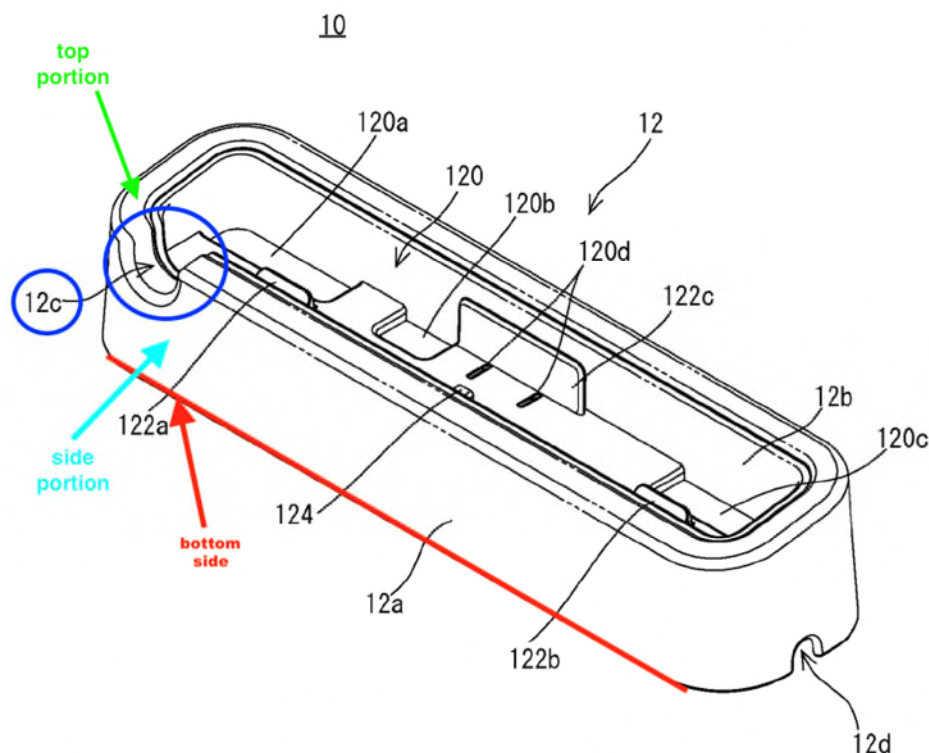
169. First of all, Liao discloses “adapters suitable for this Mac Mini electronic products” and that “[t]he adapter with this structure is compatible with electronic devices, especially with the size of Mac Mini.” Ex. 1010, [0044], [0051]. A POSITA would inherently understand the spatial relationships when mating the adapter with its intended device. Apple dictates that the Mac mini M4 features a power button located on its bottom rear-left corner. Ex. 1006, p. 2. Because a Mac mini has a designated front and back orientation, a POSITA placing it on Liao’s adapter would naturally align the base’s geometry to establish a corresponding front and back. Consequently, the adapter’s plurality of rounded corners will inherently include two back corners that align directly with the rear corners of the Mac mini.



Annotated Figure of Apple

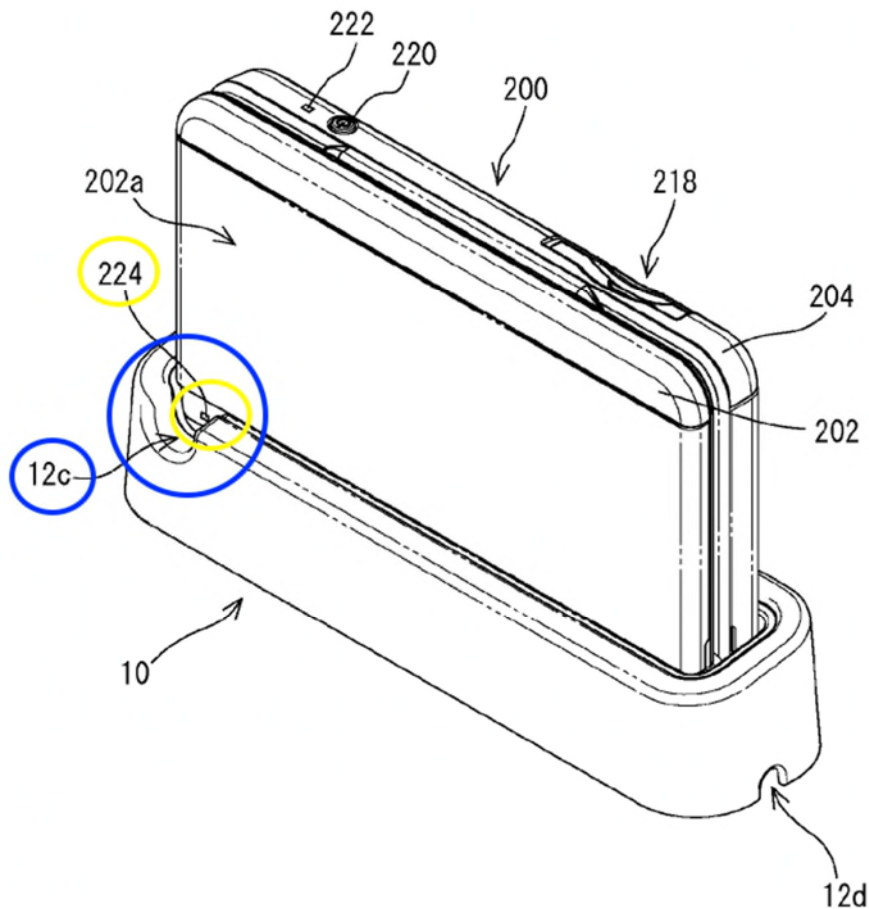
170. Liao explicitly states that “the configuration of the adapter is compatible with the electronic equipment, especially the size of the Mac Mini.” (Ex. 1010, [0051]). Because Liao’s adapter is built specifically for the Mac Mini, a POSITA would naturally seek to use it with the Mac Mini M4. However, as I discussed previously, Apple designed the Mac Mini M4 with a power button located entirely on its bottom rear-left corner. Placing this specific computer onto Liao’s unmodified square adapter creates an immediate functional conflict: the walls of Liao’s adapter would completely block a user from reaching the power button. Any competent hardware designer would recognize this accessibility issue and would inherently be driven to modify the docking station to provide a dedicated access feature for the power button.

171. In addition, Koshiishi discloses a known access structure, i.e., a notch 12c that is formed in the upper left of the charging stand. The notch 12c of Koshiishi spans the top and side portions of the stand without extending through a bottom side of the stand. When the mini-computer is placed on the top of the stand, the notch 12c of Koshiishi is adapted to expose an underlying feature of the mini-computer. “As seen from FIG. 1, FIG. 2(A) and FIG. 3(A), a notch 12c of a semi-circle shape is formed in upper left of the main body 12 (the outer side member 12 a and the inner side member 12 b) in the front of the charging stand 10.” Ex. 1007, 5:57-60.



Annotated FIG. 1 of Koshiishi

172. Furthermore, Koshiishi discloses that “the communication lamp 224 provided on the hinge 206 is arranged at a position that the notch 12c is provided. Therefore, even if the portable game apparatus 200 is being charged, it is possible to see the lighting, putting out light, blinking and the color of lighting (luminescence) of the communication lamp 224.” Ex. 1007, 11:23-28, FIG. 6(A). That is, the notch 12c of Koshiishi exposes underlying features of the electronic device.



Annotated FIG. 6(A) of Koshiishi

173. There was a recognized need and market demand in the relevant field to modify the adapter of Liao to include a corner cutaway because, as established by the Apple reference, the Mac mini M4 features a bottom-mounted power button that would otherwise be obstructed. A POSITA would have recognized that the peripheral clearance techniques taught by Koshiishi could be used with the adapter of Liao to resolve this physical obstruction. Koshiishi demonstrates that when a stand's walls block an underlying functional feature of a device, the standard mechanical solution is to remove material from the top and side portions of the stand's wall to expose that feature, without cutting all the way through the bottom.

174. There were a limited number of options for achieving the required function of providing physical access to the device's button, all of which were well known in the prior art. From an engineering perspective, modifying the stand to include a cutaway is not a product of hindsight, but a natural consequence of providing required physical access. When designing a stand that matches a device's footprint, as is standard practice to ensure a seamless fit, any physical features on the bottom or rear of the device, such as the Mac mini M4's power button, will inherently be blocked. To resolve this, some form of clearance or recess is required. It does not matter whether one calls it a gap, a notch, or a cutaway, the structure is entirely functionally driven. This

modification is a predictable use of prior art elements according to their established functions. Because this functional necessity dictates the design, creating this clearance is a highly predictable variation.

175. It would have been routine for a POSITA to modify these references to include this specific cutaway geometry. A POSITA would recognize that to expose the corresponding back bottom portion of the mini-computer, they must remove material in the top and side portions of the stand's back corner. Furthermore, it was common knowledge to POSITAs that they would specifically ensure this cutaway does not extend through the bottom side, as maintaining a solid base is necessary to preserve the stand's structural integrity and weight-bearing function. Arriving at this specific configuration is a standard, functionally necessary design choice, not a leap of innovation.

176. Therefore, utilizing the peripheral cutaway technique demonstrated in Koshiishi to resolve the physical obstruction problem in Liao's Mac mini adapter represents a standard, functionally necessary design choice. This engineering integration directly yields the structural arrangement of [1.3].

177. Therefore, it is my opinion that a POSITA would have been motivated to modify Liao in view of Apple, and further in view of Koshiishi, and would have had a reasonable expectation of success in doing so, thus reaching the

combination of Liao, Apple, and Koshiishi that teaches each and every limitation of [1.3].

178. Therefore, as shown above, claim 1 would have been obvious in light of Liao, Apple, and Koshiishi.

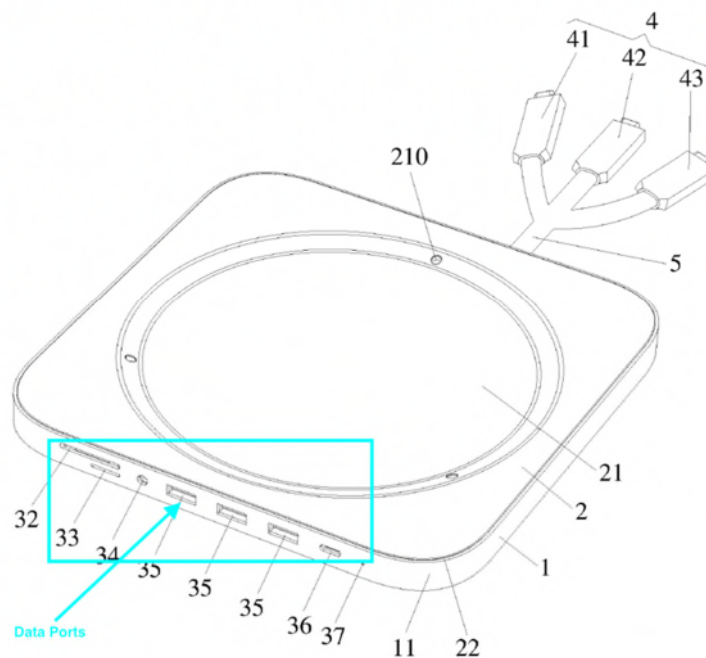
Claim 2

***[2.0] The mini-computer stand of claim 1, further comprising
[2.1] data ports on a front side of the mini-computer stand to form a hub, wherein the front side is opposite a back side of the mini-computer stand that includes the back corner.***

179. As explained above with respect to [1.0]-[1.3] in §IV.D.1, Liao in view of Apple, further in view of Koshiishi teaches [2.0]. Furthermore, as explained in sections below, Liao teaches [2.1].

180. Specifically, Liao discloses that “the adapter ports further comprise a fifth port 35 electrically connected to the control board. The base 1 is correspondingly provided with a fifth terminal hole (not shown in the figure) for supporting the fifth port 35. Specifically, the fifth terminal hole and the second terminal hole are located on the same side of the base 1, and the fifth port 35 is directly provided on the control board. Preferably, the fifth port 35 is a USB 3.0 interface, which is not uniquely limited here.” Ex. 1010, [0056], FIG. 1.

181. As shown in the following Figure 1 of Liao, because a Mac mini has a designated back side, a POSITA would understand that the adapter of Liao correspondingly has a front side and a back side when a Mac mini is placed on top of it. When the front side of adapter base 1 aligns with the front side of the Mac mini, the ports 32-37 of Liao are positioned on the front side of the adapter base 1 to form a hub, and the front side is opposite a back side of the base docking station that includes a back corner.



Annotated FIG. 1 of Liao

182. Therefore, it is my opinion that Liao teaches each and every limitation of [2.1].

183. Therefore, as shown above, claim 2 would have been obvious in light of Liao, Apple, and Koshiishi.

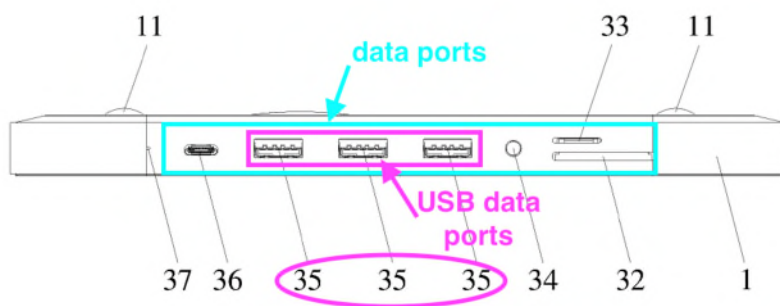
Claim 3

[3.0] The mini-computer stand of claim 2,

[3.1] wherein the front side of the mini-computer stand comprises a USB data port.

184. As explained above with respect to [2.0]-[2.1] in §IV.D.1, Liao in view of Apple, further in view of Koshiishi teaches [3.0]. Furthermore, as explained in sections below, Liao teaches [3.1].

185. Specifically, Liao discloses that “the adapter ports further comprise a fifth port 35 electrically connected to the control board. The base 1 is correspondingly provided with a fifth terminal hole (not shown in the figure) for supporting the fifth port 35. Specifically, the fifth terminal hole and the second terminal hole are located on the same side of the base 1, and the fifth port 35 is directly provided on the control board. Preferably, the fifth port 35 is a USB 3.0 interface, which is not uniquely limited here.” Ex. 1010, [0056], FIG. 4. That is, Liao discloses that the ports 32-37 positioned on the front side of the adapter base 1 include fifth port 35 that is a USB 3.0 interface.



Annotated FIG. 4 of Liao

186. Therefore, it is my opinion that Liao teaches each and every limitation of [3.1].

187. Therefore, as shown above, claim 3 would have been obvious in light of Liao, Apple, and Koshiishi.

Claim 4

***[4.0] The mini-computer stand of claim 1, further comprising
[4.1] a front side and an opposite back side that includes the back corner; and a data port on the front side and another data port on the back side of the mini-computer stand to form a hub.”***

188. As explained above with respect to [1.0]-[1.3] in §IV.D.1, Liao in view of Apple and Koshiishi teaches [4.0]. Furthermore, as explained in section below, Liao teaches [4.1].

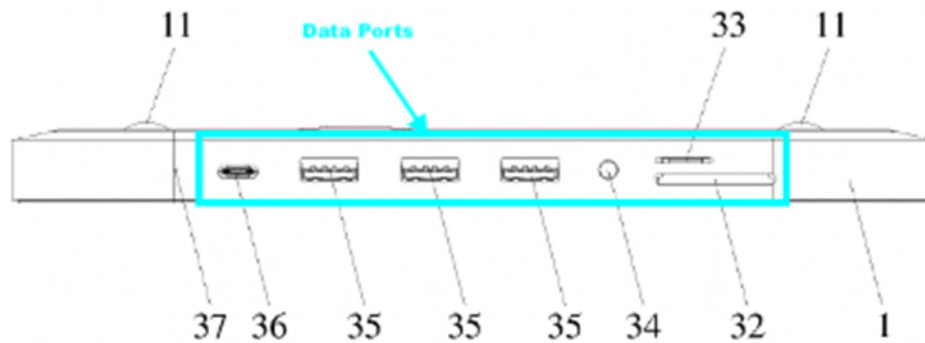
189. As explained above with respect to [2.0]-[2.1] in §IV.D.1, Liao discloses an adapter having a front side and an opposite back side that includes a back corner, and that the adapter includes data ports on the front side.

190. In addition, Liao discloses a data port on the front side and another data port on the back side of the mini-computer stand to form a hub. As shown in the following Figures 3 and 4 of Liao, Liao discloses that the Mac mini adapter includes data ports on both the front side and the back side that are opposite to each other. Ex. 1010, FIGS. 3, 4. Specifically, when the front side of the adapter

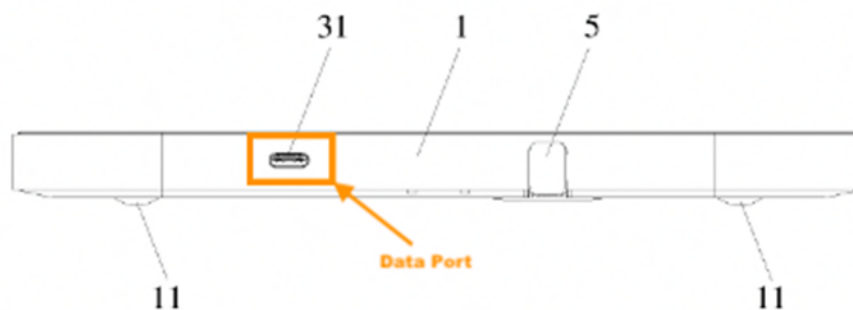
of Liao aligns with the front side of the Mac mini, the ports 32-37 of Liao are located on the first side and the port 31 is located on the back side.

191. Therefore, it is my opinion that Liao teaches each and every limitation of [4.1].

192. Therefore, as shown above, claim 4 would have been obvious in light of Liao, Apple, and Koshiishi.



Annotated FIG. 4 of Liao



Annotated FIG. 3 of Liao

Claim 5

[5.0] The mini-computer stand of claim 1,

[5.1] wherein: the back corner has a) a first height that defines a beginning of the cutaway in the side portions and b) a second height that defines an end of the cutaway in the side portions; the mini-computer stand has a stand height that is

a sum of the first height and the second height; and the second height is greater than the first height.

194. Specifically, as shown in the following Figure 1 of Koshiishi, the charging stand has a) a first height (shown in pink) that defines a beginning of the cutaway in the side portions and b) a second height (shown in purple) that defines an end of the cutaway in the side portions. The stand height (shown in blue) of the charging stand is a sum of the first height and the second height and the second height is greater than the first height. Ex. 1007, FIG. 1.

Annotated FIG. 1 of Koshiishi

195. The cutaway geometry taught by Koshiishi inherently satisfies these relative height dimensions. As illustrated in Koshiishi's FIG. 1, the charging stand's wall utilizes a partial-depth notch (12c). From a geometric standpoint, this notch structure establishes a first height (the depth of the notch from the top edge) and a second height (the remaining solid material below the notch). Because the notch is formed in the upper portion of the wall to expose the device's communication lamp (224), while leaving a substantial solid base below to support the device and maintain structural integrity, the second height is naturally greater than the first height. The overall stand height is simply the sum of these two dimensions.

196. Therefore, it is my opinion that Koshiishi teaches each and every limitation of [5.1].

197. Therefore, as shown above, claim 5 would have been obvious in light of Liao, Apple, and Koshiishi.

Claim 6

[6.0] The mini-computer stand of claim 1,"

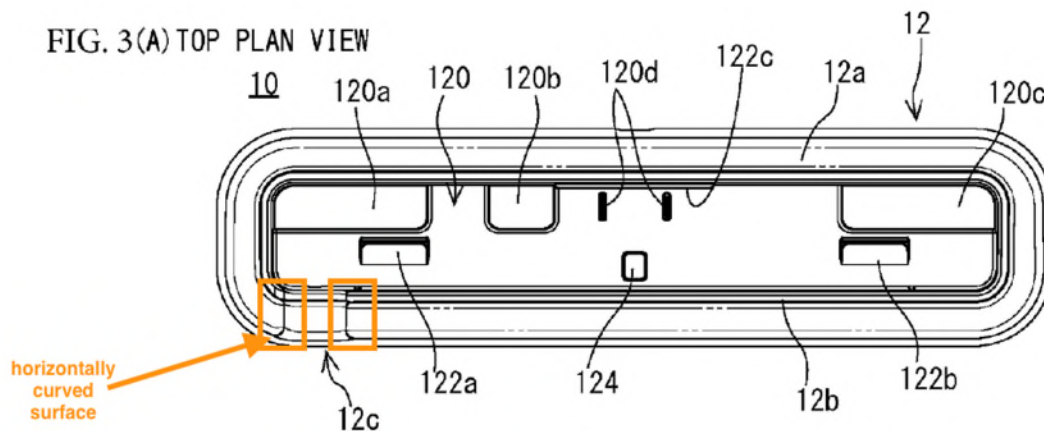
[6.1] wherein the back corner comprises a horizontally curved surface that defines the cutaway in the top and the side portions of the back corner.

198. As detailed in §IV.I below, it is my opinion that the term "horizontally curved surface" in Claim 6 is indefinite because it fails to inform a POSITA of the claim scope with reasonable certainty. To the extent that the term is

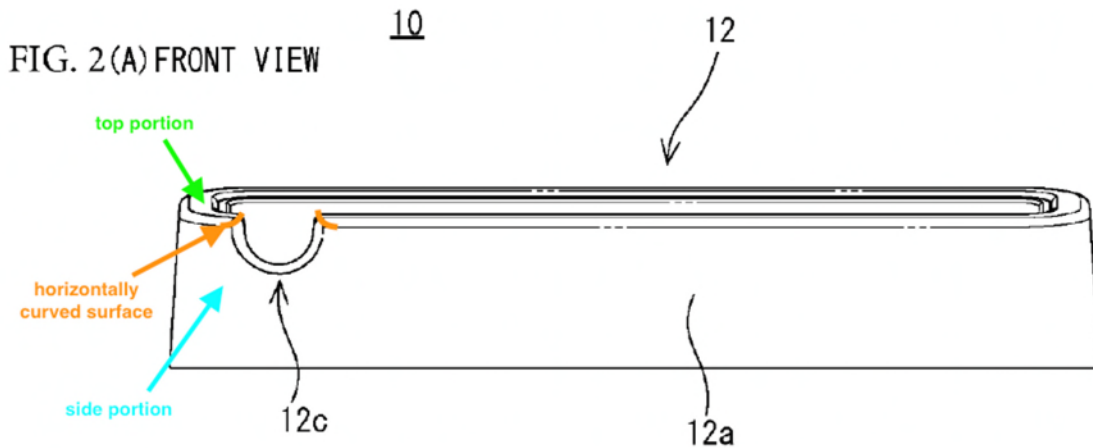
amenable to any construction that may save the claim from indefiniteness, it is my opinion that Koshiishi discloses this feature under any such reasonable interpretation.

199. As explained above with respect to [1.0]-[1.3] in §IV.D.1, Liao in view of Apple, further in view of Koshiishi teaches [6.0]. Furthermore, as explained in sections below, Koshiishi teaches [6.1].

200. Specifically, as shown in the following Figures 2(A) and 3(A) of Koshiishi, Koshiishi discloses that the charging stand has a horizontally curved surface that defines the notch 12c in the top and the side portions. Ex. 1007, FIG. 3(A).



Annotated FIG. 3(A) of Koshiishi



Annotated FIG. 2(A) of Koshiishi

201. Therefore, it is my opinion that Koshiishi teaches each and every limitation of [6.1].

202. Therefore, as shown above, claim 6 would have been obvious in light of Liao, Apple, and Koshiishi.

Claim 7

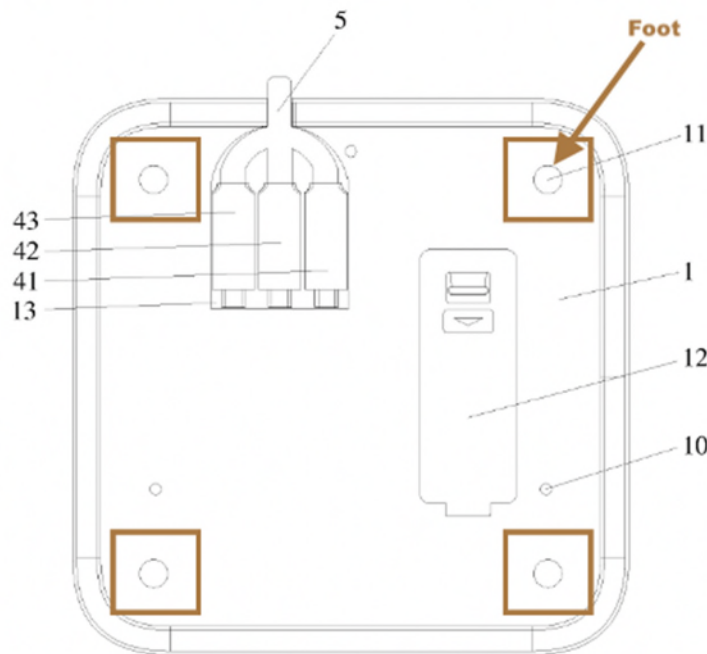
***[7.0] The mini-computer stand of claim 1, further comprising
[7.1] a plurality of feet coupled to the bottom side of the mini-computer stand that is opposite the top.***

203. As explained above with respect to [1.0]-[1.3] in §IV.D.1, Liao in view of Apple, further in view of Koshiishi teaches [7.0]. Furthermore, as explained in sections below, Liao teaches [7.1].

204. Specifically, Liao discloses that “several anti-slip rubber pads 11 are uniformly spaced on the side of the base 1 facing away from the upper cover 2. This structure, on the one hand, has several anti-slip rubber pads 11 that provide

anti-slip function; on the other hand, the base 1 can be spaced apart from the plane to prevent liquid on the plane from flowing into the adapter or electronic device, thereby improving the safety and reliability of the adapter or electronic device.” Ex. 1010, [0049].

205. In addition, as shown in the following Figure 5 of Liao, Liao discloses a plurality of feet (shown in brown) coupled to the bottom side of the base docking station 1 that is opposite the top. Ex. 1010, FIG. 5.



Annotated FIG. 5 of Liao

206. Therefore, it is my opinion that Liao teaches each and every limitation of [7.1].

207. Therefore, as shown above, claim 7 would have been obvious in light of Liao, Apple, and Koshiishi.

Claim 8

[8.0] A computer system comprising the mini-computer and the mini-computer stand of claim 1,

[8.1] wherein the mini-computer comprises the perimeter that is square with rounded corners, further wherein the perimeters of the mini-computer and the mini-computer stand are substantially the same size so that when placed on the mini-computer stand, the mini-computer stand enables access to the back bottom portion of the mini-computer through the cutaway.

208. As explained above with respect to [1.0]-[1.3] in §IV.D.1, Liao in view of Apple and Koshiishi teaches [8.0]. Furthermore, as explained in section below, Liao teaches [8.1].

209. Apple discloses the Mac Mini M4, i.e., a mini-computer that has the perimeter that is square with rounded corners. Ex. 1006.



Annotated Figure of Apple

210. Liao discloses that “the base 1 has a square structure with four first rounded corners 14. The upper end of the base 1 is an opening, and the upper cover 2 can cooperate with the base 1 to cover the opening. The upper cover 2

has the second rounded corners 22 that match the corresponding first rounded corners 14. The adapter with this structure is compatible with electronic devices, especially with the size of Mac Mini. The adapter supporting the Mac Mini is aesthetically pleasing. The adapter is designed with rounded corners to prevent right angles from scratching the user and improve safety during use.” Ex. 1010, [0051].

211. Thus, a POSITA would have been motivated to design the perimeter of the adapter of Liao for supporting Mac mini as substantially the same size as the perimeter of the Mac mini, such that when placing the Mac mini on the adapter of Liao, the adapter of Liao seamlessly supports and extends from the bottom of the Mac mini.

212. As discussed above, where a stand is substantially the same size as the perimeter of the Mac Mini M4, yet must also preserve user access to power button located on the bottom of the Mac Mini M4, the stand necessarily must include an access feature that creates sufficient access space. Because the inclusion of such a feature is dictated by the functional requirement of maintaining access, its use would have been a predictable design choice to a POSITA.

213. A POSITA would understand that this claim simply describes the assembled system of the Mac Mini M4 and the stand described in Claim 1. As established, the Mac Mini M4 features a square perimeter with rounded corners.

214. Liao explicitly teaches that its adapter base is designed to match this geometry, noting “the adapter with this structure is compatible with electronic devices, especially with the size of Mac Mini.” Ex. 1010, [0051]. Designing an accessory to have a perimeter that is substantially the exact same size as the target device is a fundamental industrial design practice; it ensures the stand feels like a seamless structural extension of the computer. When the Mac Mini M4 is placed onto Liao’s matched-footprint adapter, and that adapter is modified with Koshiishi’s corner notch as previously discussed, the resulting system perfectly aligns to enable user access to the Mac Mini M4’s bottom power button.

215. Therefore, it is my opinion that Liao teaches each and every limitation of [8.1].

216. Therefore, as shown above, claim 8 would have been obvious in light of Liao, Apple, and Koshiishi.

2. Combination of Liao, Apple, and Koshiishi

217. As discussed above with respect to §IV.D.1 and for the reasons provided below, a POSITA would have been motivated to combine Liao with Apple, and

Koshiishi based on design incentives, market dynamics, and the predictable use of known structural solutions to resolve a known problem.

218. As established above, Liao, Apple, and Koshiishi are from the same field of endeavor, i.e., support structures and accessories for mini-computers and electronic devices. At the very least, each of them addresses the problem of accessing underlying structural device features within a stand.

219. Liao discloses adapters suitable for the Mac Mini electronic products. Ex. 1010. Apple discloses the Mac Mini M4, which was unveiled on October 29, 2024, having a power button located on its bottom rear left corner. Ex. 1006. To place the Mac mini M4 of Apple onto the adapter of Liao, a POSITA would immediately recognize a functional conflict, i.e., the docking station would block access to the power button.

220. On October 29 and 30, 2024, public forums disclosed that users “can’t put a dock below the mini because of the power button” and realized that “[i]t would be trivial to put a recess in that corner to accommodate a finger.” Ex. 1011, pp. 2, 7. This is contemporaneous evidence that the public and POSITAs immediately recognized the accessibility problem and its structural solution, as well as that a clear, predictable variation was driven by market-driven design needs.

221. To address the recognized need in the relevant field to provide physical access to a bottom-mounted button, a POSITA would look to known access structures in the same field of endeavor to implement this “trivial” recess. Koshiishi discloses providing a notch or cutaway in the periphery of a charging stand to expose underlying device features, i.e., a light-emitting portion. Ex. 1007, 11:23-28, FIG. 6(A). A POSITA, as a person of ordinary creativity, would readily recognize that the peripheral cutaway of Koshiishi is readily transferable to any stand that needs to preserve physical or visual access to an underlying device feature. By implementing the method of providing a cutaway in the top and side portions that does not extend through the bottom disclosed in Koshiishi to the adapter of Liao, this modification represents the application of a known technique to a known device ready for improvement.

222. In addition, a POSITA would not be discouraged by the fact that Liao discloses a flat stacking-style dock while Koshiishi discloses an insertion-style stand holding a device vertically. I have been informed by Counsel that the test for obviousness is not whether the structures of two references can be bodily incorporated into one another, but whether a POSITA would be motivated to apply the teachings of the secondary reference to the primary one. Here, as shown in Figure 2(A) of Koshiishi, there is a clear suggestion in Koshiishi to modify a peripheral wall to include a partial-depth notch 12c on an upper

peripheral edge to allow user to access an obstructed underlying structural feature, which does not extend through the bottom side of the stand. A POSITA would readily understand that this localized access technique is orientation-agnostic and would have been motivated to apply it to the upper back corner of the flat adapter of Liao to accommodate the Mac mini M4's power button, yielding the claimed structure.

223. In fact, there were a limited number of predictable options for achieving the function of preserving user access to features located on the bottom of a device, especially when Apple discloses a fixed location of power button in Mac mini M4 and the stand is sized to substantially conform to the footprint of that device.. The stand necessarily must include an access feature at a fixed location, i.e., the back corner, that creates sufficient access space. Whether that feature is described as a gap, cutaway, recess, or notch does not change its underlying engineering purpose. Because the inclusion of such a feature is dictated by the functional requirement of maintaining access, this modification is a predictable use of prior art elements according to their established functions, making its use would have been a predictable design choice to a POSITA.

224. It would have been routine for a POSITA to modify the adapter of Liao to include this cutaway. Implementing the notch 12c of Koshiishi to the adapter of Liao would have been a localized, shallow, and non-disruptive change rather

than a substantial redesign. Liao already discloses an adapter with an upper cover for supporting the computer, a placement groove, a base forming a containment chamber, and internal structures such as memory, control board. It was common knowledge to a POSITA that providing finger access to a bottom rear power button would require only a limited relief at the relevant corner, which is just enough material removal to create access without extending deeply into the body of the adapter or altering the principal internal components. Because the modification would be confined to a corner region and would not require elimination of the placement surface, the central support area, or the basic internal arrangement disclosed in Liao, it would not be expected to interfere materially with the internal structure or compromise the overall support function of the adapter of Liao.

225. Thus, a POSITA would have had a reasonable expectation of success in modifying the adapter of Liao with the notch 12c of Koshiishi, as doing so requires only standard manufacturing techniques and does not alter the primary supporting function of the adapter of Liao. Accordingly, this predictable modification with known technique yields the expected result of maintaining device support while allowing user access to the power button.

E. GROUND 5: Claims 2 and 8 of the '567 Patent are rendered obvious by Liao, Apple, Koshiishi, and Satechi

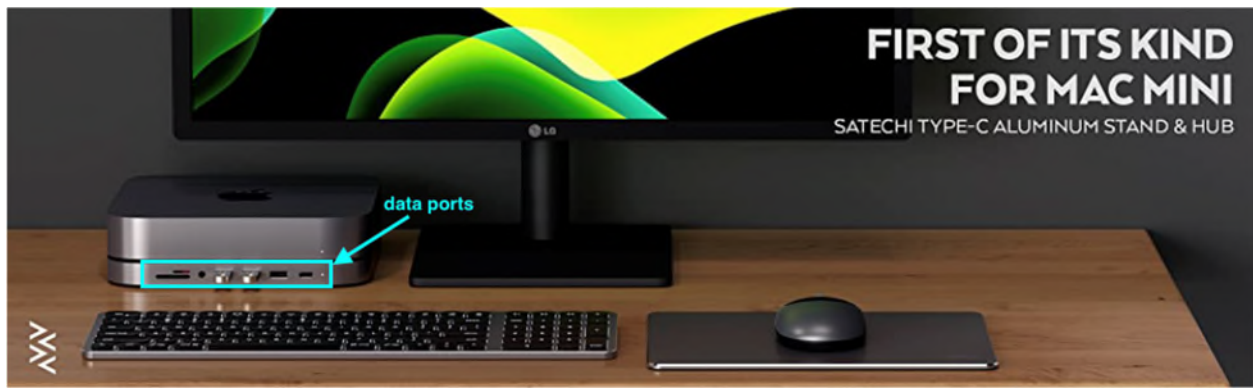
1. Analysis

Claim 2

***[2.0] The mini-computer stand of claim 1, further comprising
[2.1] data ports on a front side of the mini-computer stand to form a hub, wherein the front side is opposite a back side of the mini-computer stand that includes the back corner.***

226. As explained above with respect to [2.0]-[2.1] in §IV.D.1, Liao in view of Apple and Koshiishi teaches [2.0] and [2.1]. Furthermore, as explained in section below, Satechi teaches [2.1].

227. Satechi discloses a stand compatible with Mac Mini having data ports on the front side of the stand. Ex. 1008, p. 1. Specifically, Satechi discloses that the stand “features an USB-C data port, three USB 3.0 ports, micro/SD card readers, and a 3.5 mm headphone jack port for convenient access to your essential peripherals.” Ex. 1008, p. 3. As shown in the following figure, to make it easier for users to access the data ports when the mini-computer is placed onto the stand, the data ports are positioned on the user-facing front side. Ex. 1008, p. 2. A POSITA would understand that this user-facing front side opposites a back side of the stand, which includes a back corner corresponding to a back bottom portion of the mini-computer. For instance, Satechi discloses a stand where the data ports are located on the user-facing front side, in opposition to the back side that corresponds with the back side of the mini-computer.



Annotated Figure of Satechi

228. A POSITA would have recognized that the front-facing data ports taught by Satechi could improve the adapter of Liao. Specifically, a POSITA would have been motivated to implement the data ports of Satechi in the adapter of Liao, so that the users can easily access the data ports when the Mac mini M4 is placed on the adapter of Liao. It would have been routine for a POSITA to modify the adapter of Liao to integrate I/O functionality into the adapter of Liao is a product architecture choice with well understood benefits. Such a configuration makes effective use of the adapter's physical volume, places ports in a convenient user-facing location, and helps organize cables by centralizing external connections at the support stand structure. This a routine combination of known elements performing their ordinary functions without modification, i.e., the base supports the device, and the data ports provide connectivity. Because each element operates as expected and the resulting advantages are well understood, a POSITA would have had a reasonable expectation of success in implementing this predictable and routine design choice for a POSITA.

229. Therefore, it is my opinion that a POSITA would have been motivated to modify Liao, Apple, and Koshiishi by using the data ports of Satechi, and thus reach the combination of Liao, Apple, Koshiishi and Satechi that teaches each and every limitation of [2.1].

230. Therefore, as shown above, claim 2 would have been obvious in light of Liao, Apple, Koshiishi and Satechi.

Claim 8

[8.0] A computer system comprising the mini-computer and the mini-computer stand of claim 1,

[8.1] wherein the mini-computer comprises the perimeter that is square with rounded corners, further wherein the perimeters of the mini-computer and the mini-computer stand are substantially the same size so that when placed on the mini-computer stand, the mini-computer stand enables access to the back bottom portion of the mini-computer through the cutaway.

231. As explained above with respect to [8.0]-[8.1] in §IV.D.1, Liao in view of Apple and Koshiishi teaches [8.0] and [8.1]. Furthermore, as explained in section below, Satechi teaches [8.1].

232. Apple discloses the Mac Mini M4, i.e., a mini-computer that has the perimeter that is square with rounded corners. Ex. 1006.



Annotated Figure of Apple

233. Liao discloses that “the base 1 has a square structure with four first rounded corners 14. The upper end of the base 1 is an opening, and the upper cover 2 can cooperate with the base 1 to cover the opening. The upper cover 2 has the second rounded corners 22 that match the corresponding first rounded corners 14. The adapter with this structure is compatible with electronic devices, especially with the size of Mac Mini. The adapter supporting the Mac Mini is aesthetically pleasing. The adapter is designed with rounded corners to prevent right angles from scratching the user and improve safety during use.” Ex. 1010, [0051].

234. Thus, a POSITA would have been motivated to design the perimeter of the adapter of Liao for supporting Mac mini as substantially the same size as the perimeter of the Mac mini, such that when placing the Mac mini on the

adapter of Liao, the adapter of Liao seamlessly supports and extends from the bottom of the Mac mini.

235. In addition, Satechi discloses Mac mini, a mini-computer with a perimeter that is square with rounded corners, and a stand or hub that is “[d]esigned to feel like a natural extension of your Mac Mini with an elegant brushed finish and matching space gray aluminum alloy.” That is, Satechi discloses that the perimeters of the mini-computer and the mini-computer stand are substantially the same size. Ex. 1008, p. 3.



Annotated Figure of Satechi



Annotated Figure of Satechi

236. As discussed above, where a stand is substantially the same size as the perimeter of the Mac Mini M4, yet must also preserve user access to power button located on the bottom of the Mac Mini M4, the stand necessarily must include an access feature that creates sufficient access space. Because the inclusion of such a feature is dictated by the functional requirement of maintaining access, its use would have been a predictable design choice to a POSITA.

237. Therefore, it is my opinion that a POSITA would have been motivated to modify Liao, Apple, and Koshiishi by implementing the perimeters of Satechi,

and thus reach the combination of Liao, Apple, Koshiishi and Satechi that teaches each and every limitation of [8.1].

238. Therefore, as shown above, claim 8 would have been obvious in light of Liao, Apple, Koshiishi and Satechi.

2. Combination of Liao, Apple, Koshiishi, and Satechi

239. As explained above with respect to [2.0]-[2.1] and [8.0]-[8.1] in § IV.D, the combination of Liao, Apple, and Koshiishi renders dependent claims 2 and 8 obvious by introducing routine utility and design solutions, i.e., distributed data port placement and footprint sizing. To the extent the combination of Liao, Apple, and Koshiishi does not explicitly detail these limitations, a POSITA would have been motivated to implement the teachings of Satechi.

240. Satechi discloses the well-known industry solution of placing data ports on a user-facing front side of the stand, opposite the back side comprising a back corner, to provide easier access when the device is placed on the stand. Satechi also discloses designing the perimeter of the stand to be substantially the same size as the mini-computer to provide a seamless, aligned support.

241. A POSITA would have recognized that the front-facing data ports and substantially same-sized perimeter taught by Satechi could improve the adapter of Liao. A POSITA, as a person of ordinary creativity, would understand that the adapter of Liao is ready for improvement, and would have been motivated

to implement Satechi's teachings to enhance user accessibility and structural alignment. It would have been routine for a POSITA to modify the adapter of Liao to include these features. Because placing data ports and matching device perimeters are routine techniques that do not alter the primary supporting function of the adapter of Liao, a POSITA would have had a reasonable expectation of success in implementing this modification. This modification is a predictable use of prior art elements according to their established functions. Specifically, this combination is a straightforward arrangement of known elements that yields the predictable result of a more convenient, aesthetically pleasing mini-computer hub where users can easily and seamlessly access the data ports.

F. GROUND 6: Claims 1-3, 5, and 8 of the '567 Patent are rendered obvious by Satechi, Apple, and Shen

1. Overview of Shen

242. I understand that Shen was published on November 17, 2022.

243. Shen discloses an adapter for a payment accessory. Ex. 1012, [0022]. Specifically, Shen discloses that “the accessory 124 is coupled to the housing 104 [of a mobile computing device 100] via an adapter 128 that is configured to engage with a battery well of the device 100. In other words, the accessory 124 can be readily attached and removed to and from the device.” Ex. 1012, [0022]; “The adapter 128 includes an accessory bay on the outer side...facing away from

the device 100 when the adapter 128 is installed in the battery well 300. The accessory bay is configured to receive the payment accessory 124.” Ex. 1012, [0033].

244. In addition, Shen discloses that “to enable continued access to the slots 212 and 216 when the accessory 124 is installed in the accessory bay of the adapter 128, at least one of the containment walls 508 includes a cutout at an outer edge thereof. In particular, the walls 508-1 and 508-3 include cutouts 540 extending along a portion of the width of the adapter 128 to enable access to the slot 216. Further, the wall 508-4 includes a cutout 544 to enable access to the card slot 212. The cutout 544 extends along a majority of a length of the wall 508-4 in this example.” Ex. 1012, [0038].

245. Looking at Shen, the reference details a supportive adapter or “accessory bay” designed to securely hold a mobile computing device. As an engineer, the most salient feature of Shen is how it addresses the problem of physical obstruction. The adapter uses containment walls to hold the device in place, but those walls inherently block access to essential slots on the device’s edges.

246. To mitigate this, Shen teaches the use of specifically placed cutouts (such as cutouts 540 and 544) along the outer top edges of the containment walls. These cutaways remove material from the top and side portions of the adapter wall, without penetrating the bottom floor, strictly to “enable continued access” to the obstructed features of the seated device. Shen effectively demonstrates that

localized peripheral cutouts are a standard, universally applicable structural technique for ensuring physical access to a docked electronic component.

247. It is my opinion that the adapter described in Shen is analogous to the claimed invention because it is in the same field of endeavor as the claimed invention of the '567 Patent. The '567 Patent focuses on designing “a stand for use with a mini-computer.” *See* Ex. 1001, 1:14-17, Claim 1. Similarly, Shen is directed toward engineering an adapter or accessory bay designed to hold a payment accessory, which functions as a mini-computer. *See* Ex. 1012, [0022]. Because both documents are expressly concerned with the mechanical design of support stands and enclosures for electronic devices, a POSITA developing the stand in the '567 Patent would naturally consider the adapter in Shen as part of their direct design space.

248. Even if Shen were considered to be outside the specific field of endeavor of designing support stands, it is reasonably pertinent to the particular problem addressed by the claimed invention in the '567 Patent. The fundamental mechanical problem here involves securing an electronic device within a support base without obstructing access to its essential physical features. Shen deals directly with this mechanical issue by utilizing strategically placed cutouts (540 and 544) along the adapter's peripheral walls to ensure users maintain access to the docked device's functional features. *See* Ex. 1012, [0038], FIG. 5. Because Shen provides a direct, established structural solution to the common problem of

preserving access to obstructed components within a support base, any POSITA working on a compatible mini-computer stand would inherently rely on these teachings to ensure they do not block essential underlying features.

2. Analysis

Claim 1

[1.0] A mini-computer stand for use with a mini-computer that has a square perimeter with rounded corners, the mini-computer stand comprising:

249. To the extent the preamble is limiting, Satechi discloses [1.0].

250. As discussed in §IV.B.1, Satechi discloses a stand or hub compatible with Mac mini. Ex.1008, p. 3. In addition, Satechi discloses that a Mac mini is a mini-computers that have square perimeters with rounded corners. Ex.1008, p. 3.



Annotated Figure of Satechi



Annotated Figure of Satechi

251. As discussed in §IV.A.2, in the same field of endeavor, Apple discloses Mac Mini M4, i.e., a mini-computer that has a square perimeter with rounded corners. Ex. 1006, p. 2.



Annotated Figure of Apple

252. As discussed in §IV.F.1, in the same field of endeavor, Shen discloses an adapter for a payment accessory, which is a mini-computer. Ex. 1012, [0022].

[1.1] a top configured for placement of the mini-computer; and

253. As set forth in detail below, Ye discloses [1.1].

254. Specifically, as shown in the following figure of Satechi, Satechi discloses that the stand has a top configured for placement of the mini-computer. Ex. 1008, p. 3.



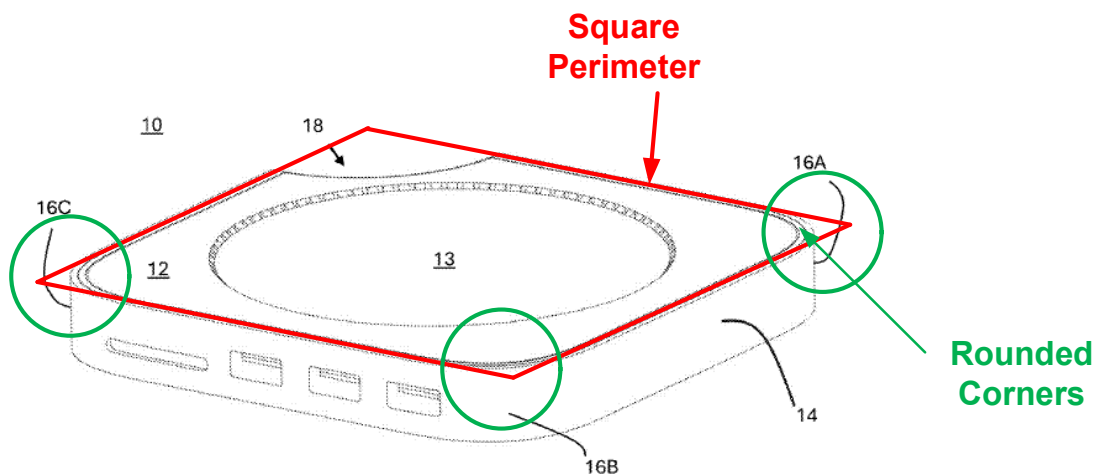
Annotated Figure of Satechi

255. Therefore, it is my opinion that Satechi teaches each and every limitation of [1.1].

[1.2] a perimeter that is square with a plurality of rounded corners,

256. As set forth in detail below, Satechi discloses [1.2].

257. Specifically, as shown in the following figure of Satechi, Satechi discloses a stand, having a perimeter that is square (shown in red) with a plurality of rounded corners (shown in green).



Annotated FIG. 3A of the '567 Patent



Annotated Figure of Satechi

258. Therefore, it is my opinion that Satechi teaches each and every limitation of [1.2].

[1.3] wherein a back corner from the plurality of rounded corners of the mini-computer stand comprises a cutaway in top and side portions of the back corner that does not extend through a bottom side of the mini-computer stand, which is adapted to expose a corresponding back bottom portion of the mini-computer through the cutaway when the mini-computer is placed on the top of the mini-computer stand.

259. As set forth in detail below, Satechi in view of Apple, further in view of Shen discloses [1.3].

260. First of all, Satechi discloses a stand or hub compatible with Mac mini. Ex. 1008, p. 1. A POSITA would inherently understand the spatial relationships when mating the docking station with its intended device. Apple dictates that the Mac mini M4 features a power button located on its bottom rear-left corner.

Ex. 1006, p. 2. Because a Mac mini has a designated front and back orientation, a POSITA placing it on Satechi's stand would naturally align the station's geometry to establish a corresponding front and back. Consequently, the stand's plurality of rounded corners will inherently include two back corners that align directly with the rear corners of the Mac mini.



Annotated Figure of Satechi

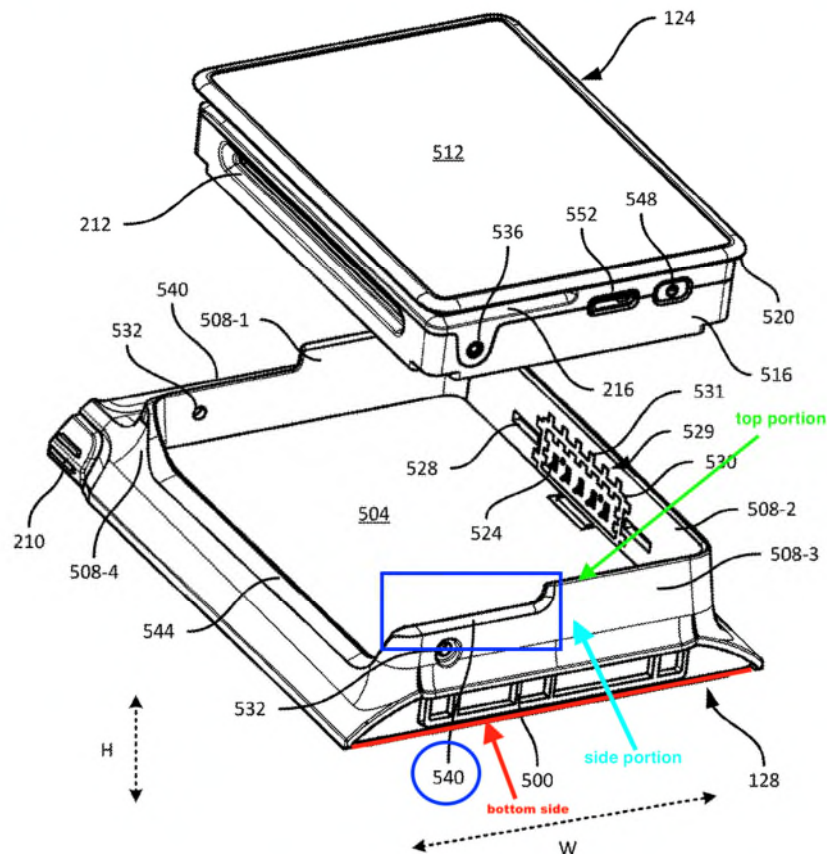


Annotated Figure of Apple

261. Satechi explicitly states that the stand is compatible with Mac mini, a mini-computer. (Ex. 1008, p. 2). Because Satechi's stand is explicitly marketed and designed for the Mac Mini, a POSITA updating this accessory would naturally seek to make it compatible with the Mac Mini M4. However, as I discussed previously, Apple designed the Mac Mini M4 with a power button located entirely on its bottom rear-left corner. Placing the Mac Mini M4 onto Satechi's unmodified stand creates a critical physical obstruction: Satechi's solid upper walls would completely block the user from accessing the Mac Mini M4's bottom rear-left power button. Any competent hardware designer would recognize this accessibility issue and would inherently be driven to modify the docking station to provide a dedicated access feature for the power button.

262. In addition, Shen discloses a known access structure, i.e., cutouts 540 formed in the upper left of the accessory bay. The cutouts 540 of Shen spans the top and side portions of the accessory bay without extending through a bottom side of the accessory bay. When the accessory is placed on the top of the accessory bay, the cutouts 540 of Shen is adapted to expose an underlying feature of the accessory. "In the illustrated example, to enable continued access to the slots 212 and 216 when the accessory 124 is installed in the accessory bay of the adapter 128, at least one of the containment walls 508 includes a cutout at an outer edge thereof. In particular, the walls 508-1 and 508-3 include

cutouts 540 extending along a portion of the width of the adapter 128 to enable access to the slot 216. Further, the wall 508-4 includes a cutout 544 to enable access to the card slot 212. The cutout 544 extends along a majority of a length of the wall 508-4 in this example.” Ex. 1012, [0038].



Annotated FIG. 5 of Shen

263. There was a recognized need and market demand in the relevant field to modify the base docking station of Ye to include a corner cutaway because, as established by the Apple reference, the Mac mini M4 features a bottom-mounted power button that would otherwise be obstructed. A POSITA would

have recognized that the peripheral clearance techniques taught by Koshiishi could be used with the base docking station of Ye to resolve this physical obstruction. Shen demonstrates that when containment walls block access to functional slots or buttons on a docked device, the standard mechanical solution is to form a localized cutaway along the outer top edge of the wall. Ex. 1012, [0038], FIG. 5. Crucially, Shen teaches removing material from the top and side portions of the wall to “enable continued access,” without extending the cutout entirely through the bottom floor of the adapter. Ex. 1012, [0038].

264. There were a limited number of options for achieving the required function of providing physical access to the device’s button, all of which were well known in the prior art. From an engineering perspective, modifying the stand to include a cutaway is not a product of hindsight, but a natural consequence of providing required physical access. When designing a stand that matches a device’s footprint, as is standard practice to ensure a seamless fit, any physical features on the bottom or rear of the device, such as the Mac mini M4’s power button, will inherently be blocked. To resolve this, some form of clearance or recess is required. It does not matter whether one calls it a gap, a notch, or a cutaway, the structure is entirely functionally driven. Because this functional necessity dictates the design, this modification is a predictable use of

prior art elements according to their established functions, creating this clearance is a highly predictable variation.

265. It would have been routine for a POSITA to modify the stand of Satechi to include this specific cutaway geometry. A POSITA would recognize that to expose the corresponding back bottom portion of the mini-computer, they must remove material in the top and side portions of the stand's back corner. Furthermore, it was common knowledge to POSITAs that they would specifically ensure this cutaway does not extend through the bottom side, as maintaining a solid base is necessary to preserve the stand's structural integrity and weight-bearing function. Arriving at this specific configuration is a standard, functionally necessary design choice, not a leap of innovation.

266. Therefore, utilizing the peripheral cutaway technique demonstrated in Shen to resolve the physical obstruction problem in Satechi's Mac mini stand represents a standard, functionally necessary design choice. This engineering integration directly yields the structural arrangement of [1.3]. Thus, a POSITA would have had a reasonable expectation of success in modifying the stand, as doing so requires only standard manufacturing techniques and does not alter the primary supporting function of Satechi's stand.

267. Therefore, it is my opinion that a POSITA would have been motivated to modify Satechi in view of Apple, and further in view of Shen, and thus reach

the combination of Satechi, Apple, and Shen that teaches each and every limitation of [1.3].

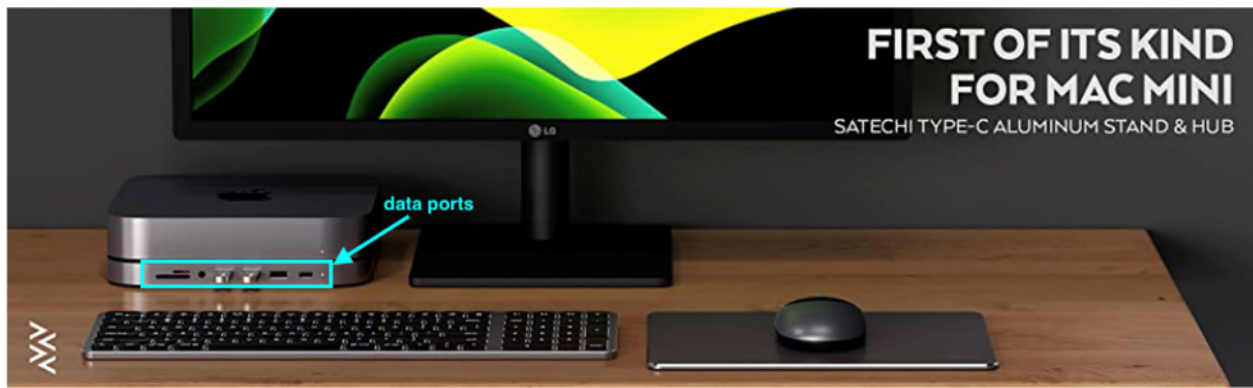
268. Therefore, as shown above, claim 1 would have been obvious in light of Satechi, Apple, and Shen.

Claim 2

***[2.0] The mini-computer stand of claim 1, further comprising
[2.1] data ports on a front side of the mini-computer stand to form a hub, wherein the front side is opposite a back side of the mini-computer stand that includes the back corner.***

269. As explained above with respect to [1.0]-[1.3] in §IV.F.2, Satechi in view of Apple, further in view of Shen teaches [2.0]. Furthermore, as explained in sections below, Satechi teaches [2.1].

270. Specifically, Satechi discloses a stand compatible with Mac Mini having data ports on the front side of the stand. Ex. 1008, p. 1. Specifically, Satechi discloses that the stand “features an USB-C data port, three USB 3.0 ports, micro/SD card readers, and a 3.5 mm headphone jack port for convenient access to your essential peripherals.” Ex. 1008, p. 3. As shown in the following figure, to make it easier for users to access the data ports when the mini-computer is placed onto the stand, the data ports are positioned on the user-facing front side. Ex. 1008, p. 2. A POSITA would understand that this user-facing front side opposites a back side of the stand, which includes a back corner corresponding to a back bottom portion of the mini-computer.



Annotated Figure of Satechi

271. Therefore, it is my opinion that Satechi teaches each and every limitation of [2.1].

272. Therefore, as shown above, claim 2 would have been obvious in light of Satechi, Apple, and Shen.

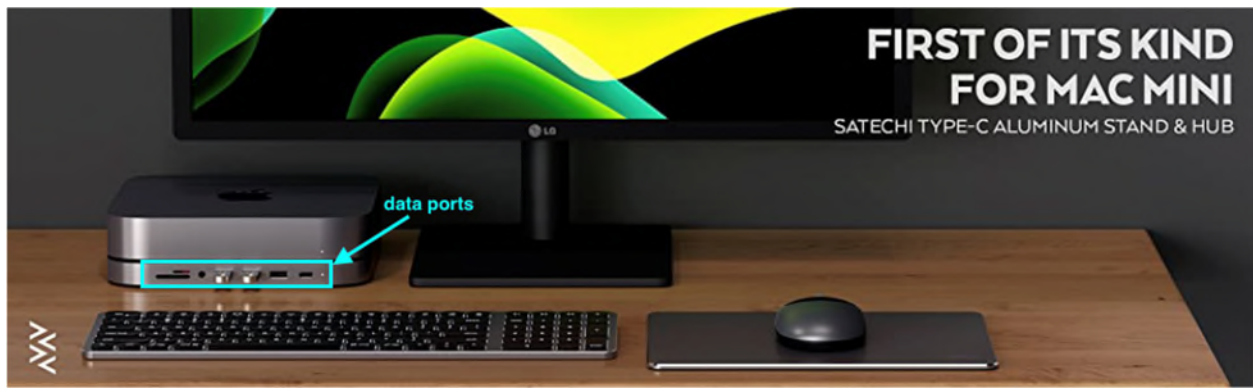
Claim 3

[3.0] The mini-computer stand of claim 2,

[3.1] wherein the front side of the mini-computer stand comprises a USB data port.

273. As explained above with respect to [2.0]-[2.1] in §IV.F.2, Satechi in view of Apple, further in view of Shen teaches [3.0]. Furthermore, as explained in sections below, Satechi teaches [3.1].

274. Specifically, as shown in the following figure, Satechi discloses that the various data ports positioned on the front side of the stand include “an USB-C data port, three USB 3.0 ports, micro/SD card readers, and a 3.5 mm headphone jack port for convenient access to your essential peripherals.” Ex. 1008, pp. 2-3.



Annotated Figure of Satechi

275. Therefore, it is my opinion that Satechi teaches each and every limitation of [3.1].

276. Therefore, as shown above, claim 3 would have been obvious in light of Satechi, Apple, and Shen.

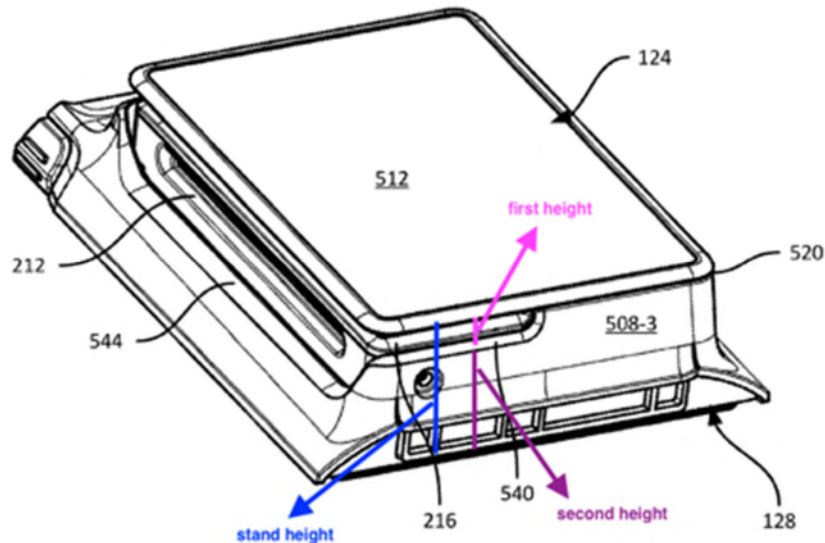
Claim 5

***[5.0] The mini-computer stand of claim 1,
[5.1] wherein: the back corner has a) a first height that defines a beginning of the cutaway in the side portions and b) a second height that defines an end of the cutaway in the side portions; the mini-computer stand has a stand height that is a sum of the first height and the second height; and the second height is greater than the first height.***

277. As explained above with respect to [1.0]-[1.3] in §IV.F.2, Satechi in view of Apple, further in view of Shen teaches [5.0]. Furthermore, as explained in sections below, Shen teaches [5.1].

278. Specifically, as shown in the following Figure 7 of Shen, the accessory bay has a) a first height (shown in pink) that defines a beginning of the cutaway in the side portions and b) a second height (shown in purple) that defines an end of the cutaway in the side portions. The stand height (shown in blue) of the

accessory bay is a sum of the first height and the second height and the second height is greater than the first height. Ex. 1012, FIG. 7.



Annotated FIG. 7 of Shen

279. The cutaway geometry taught by Shen inherently satisfies these relative height dimensions. As illustrated in Shen's FIG. 7, the charging stand's wall utilizes a partial-depth cutout (540). From a geometric standpoint, this cutout structure establishes a first height (the depth of the cutout from the top edge) and a second height (the remaining solid material below the cutout). Because the cutout is formed in the upper portion of the wall to expose the device's slot (216), while leaving a substantial solid base below to support the device and maintain structural integrity, the second height is naturally greater than the first height. The overall stand height is simply the sum of these two dimensions.

280. Therefore, it is my opinion that Shen teaches each and every limitation of [5.1].

281. Therefore, as shown above, claim 5 would have been obvious in light of Satechi, Apple, and Shen.

Claim 8

[8.0] A computer system comprising the mini-computer and the mini-computer stand of claim 1,

[8.1] wherein the mini-computer comprises the perimeter that is square with rounded corners, further wherein the perimeters of the mini-computer and the mini-computer stand are substantially the same size so that when placed on the mini-computer stand, the mini-computer stand enables access to the back bottom portion of the mini-computer through the cutaway.

282. As explained above with respect to [1.0]-[1.3] in §IV.F.2, Satechi in view of Apple and Shen teaches [8.0]. Furthermore, as explained in section below, Satechi teaches [8.1].

283. Apple discloses the Mac Mini M4, i.e., a mini-computer that has the perimeter that is square with rounded corners. Ex. 1006.



Annotated Figure of Apple

284. Satechi discloses Mac mini, a mini-computer with a perimeter that is square with rounded corners, and a stand or hub that is “[d]esigned to feel like a natural extension of your Mac Mini with an elegant brushed finish and matching space gray aluminum alloy.” That is, Satechi discloses that the perimeters of the mini-computer and the mini-computer stand are substantially the same size. Ex. 1008, p. 3.



Annotated Figure of Satechi



Annotated Figure of Satechi

285. As discussed above, where a stand is substantially the same size as the perimeter of the Mac Mini M4, yet must also preserve user access to power button located on the bottom of the Mac Mini M4, the stand necessarily must include an access feature that creates sufficient access space. Because the inclusion of such a feature is dictated by the functional requirement of maintaining access, its use would have been a predictable design choice to a POSITA.

286. Therefore, it is my opinion that Satechi teaches each and every limitation of [8.1].

287. Therefore, as shown above, claim 8 would have been obvious in light of Satechi, Apple, and Shen.

3. Combination of Satechi, Apple, and Shen

288. As discussed above with respect to §IV.F.1-2 and for the reasons provided below, a POSITA would have been motivated to combine Satechi with Apple, and Shen based on design incentives, market dynamics, and the predictable use of known structural solutions to resolve a known problem.

289. As established above, Satechi, Apple, and Shen are from the same field of endeavor, i.e., support structures and accessories for mini-computers and electronic devices. At the very least, each of them addresses the problem of accessing underlying structural device features within a stand.

290. Satechi discloses a stand specifically matched with the MAC mini. Ex. 1008. Apple discloses the Mac Mini M4, which was unveiled on October 29, 2024, having a power button located on its bottom rear left corner. Ex. 1006. To place the Mac mini M4 of Apple onto the stand of Satechi, a POSITA would immediately recognize a functional conflict, i.e., the stand would block access to the power button.

291. On October 29 and 30, 2024, public forums disclosed that users “can’t put a dock below the mini because of the power button” and realized that “[i]t would be trivial to put a recess in that corner to accommodate a finger.” Ex.

1011, pp. 2, 7. This is contemporaneous evidence that the public and POSITAs immediately recognized the accessibility problem and its structural solution, as well as that a clear, predictable variation was driven by market-driven design needs.

292. To address the recognized need in the relevant field to provide physical access to a bottom-mounted button, a POSITA would look to known access structures in the same field of endeavor to implement this “trivial” recess. Shen discloses providing a cutout or cutaway in the periphery of a charging stand to expose underlying physical features, i.e., a card slot. Ex. 1012, [0038], FIG. 5. A POSITA, as a person of ordinary creativity, would readily recognize that the peripheral cutaway of Shen is readily transferable to any stand that needs to preserve physical access to an underlying device feature. By implementing the method of providing a cutaway in the top and side portions that does not extend through the bottom disclosed in Shen to the stand of Satechi, this modification represents the application of a known technique to a known device ready for improvement.

293. In addition, a POSITA would not be discouraged by the fact that Satechi discloses a flat stacking-style stand while Shen describes an adapter with a recessed accessory bay featuring containment walls. I have been informed by Counsel that the test for obviousness is not whether the structures of two

references can be bodily incorporated into one another, but whether a POSITA would be motivated to apply the teachings of the secondary reference to the primary one. Here, there is a clear suggestion in Shen to provide localized cutouts 540 on an outer peripheral edge to allow user to access an obstructed underlying physical feature on a mated device, which does not extend through the bottom side of the accessory bay. A POSITA would readily understand that this localized access technique is a routine, universally applicable design choice for electronic support structures and would have been motivated to apply it to the upper back corner of the flat stand of Satechi to accommodate the Mac mini M4's power button. As such, a POSITA would have a high expectation of success in seamlessly resolving the accessibility conflict without altering the primary weight-bearing function of Satechi's stand and yielding the claimed structure.

294. In fact, there were a limited number of predictable options for achieving the function of preserving user access to features located on the bottom of that device, especially when Apple discloses a fixed location of power button in Mac mini M4 and the stand is sized to substantially conform to the footprint of that device. The stand necessarily must include an access feature at a fixed location, i.e., the back corner, that creates sufficient access space. Whether that feature is described as a gap, cutaway, recess, or notch does not change its underlying

engineering purpose. Because the inclusion of such a feature is dictated by the functional requirement of maintaining access, this modification is a predictable use of prior art elements according to their established functions, making its use a predictable design choice to a POSITA.

295. It would have been routine for a POSITA to modify the base docking station of Ye to include this cutaway. Implementing the cutouts 540 of Shen to the stand of Satechi would have been a localized, shallow, and non-disruptive change rather than a substantial redesign. Satechi already discloses an adapter with a placement surface for supporting the computer, a placement groove, and internal structures such as Type-C connection and built-in air vents. It was common knowledge to a POSITA that providing finger access to a bottom rear power button would require only a limited relief at the relevant corner, which is just enough material removal to create access without extending deeply into the body of the stand or altering the principal internal components. Because the modification would be confined to a corner region and would not require elimination of the placement surface, the central support area, or the basic internal arrangement disclosed in Satechi, it would not be expected to interfere materially with the internal structure or compromise the overall support function of the stand of Satechi.

296. Thus, a POSITA would have had a reasonable expectation of success in modifying the stand of Satechi with the cutouts 540 of Shen, as doing so requires only standard manufacturing techniques and does not alter the primary supporting function of the stand of Satechi. Accordingly, this predictable modification with known technique yields the expected result of maintaining device support while allowing user access to the power button.

G. GROUND 7: Claims 4 and 7 of the '567 Patent are rendered obvious by Satechi, Apple, Shen, and Liao

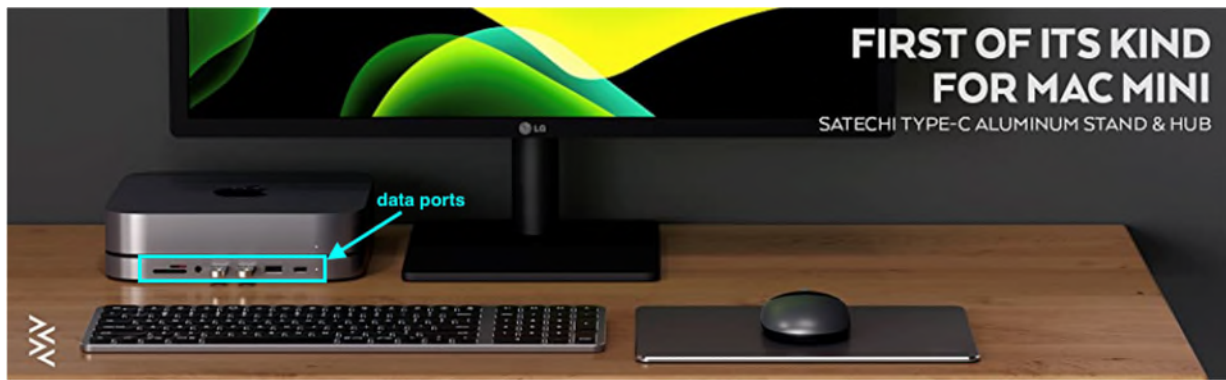
1. Analysis

Claim 4

***[4.0] The mini-computer stand of claim 1, further comprising
[4.1] a front side and an opposite back side that includes the back corner; and a data port on the front side and another data port on the back side of the mini-computer stand to form a hub.”***

297. As explained above with respect to [1.0]-[1.3] in §IV.F.2, Satechi in view of Apple and Shen teaches [4.0]. Furthermore, as explained in section below, Liao teaches [4.1].

298. As explained above with respect to [2.0]-[2.1] in §IV.F.2, Satechi discloses a stand having a front side and an opposite back side that includes a back corner, and that the stand includes data ports on the front side. Ex. 1008, p. 2.



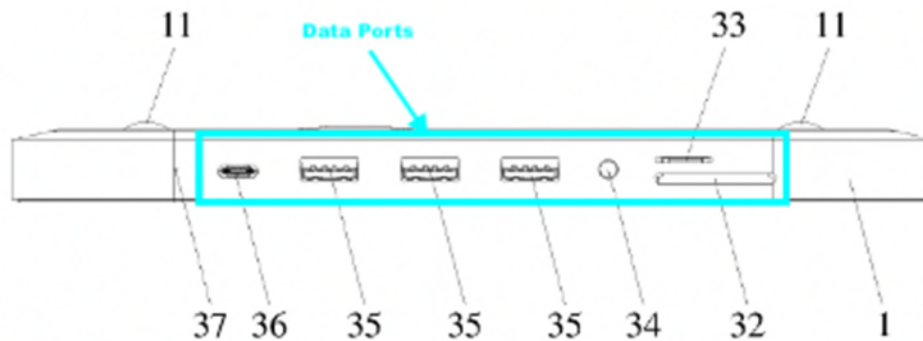
Annotated Figure of Satechi

299. In addition, as shown in the following figure of Satechi, Satechi discloses that the stand has a USB-C connection located at the back side of the stand. Ex. 1008, p. 1. Specifically, Satechi discloses that the stand is “[d]esigned to function as both a stand and an USB hub for your 2018 & later Mac Mini – all using a single Type-C connection.” Ex. 1008, p. 3.

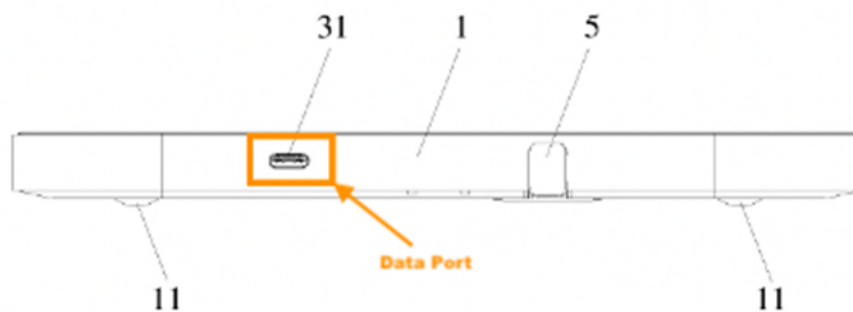


Reproduced Figure of Satechi

300. Liao discloses a Mac mini adapter for supporting a Mac mini, which has a front side and an opposite back side that includes the back corner. In addition, Liao discloses a data port on the front side and another data port on the back side of the mini-computer stand to form a hub. Ex. 1010, [0044]. As shown in the following Figures 3 and 4 of Liao, Liao discloses that the Mac mini adapter includes data ports on both the front side and the back side that are opposite to each other. Ex. 1010, FIGS. 3, 4.



Annotated FIG. 4 of Liao



Annotated FIG. 3 of Liao

301. A POSITA would have recognized that the data port arrangement of Liao could improve the base docking station of Ye. Specifically, to provide additional available surface area and enable more flexible and spacious data

port placement, it would have been routine for a POSITA to replace the USB-C connection at the back side of the stand of Satechi with the data port of Liao so that the connection could be more flexible. This modification is a predictable use of prior art elements according to their established functions, as it merely substitute standard connectivity features with each other. Implementing this predictable modification would have allowed the stand to be more flexibly connected to the interfaces on the rear side of Mac mini, yielding the predictable results of minimizing cable clutter and enhancing overall ease of use.

302. Therefore, it is my opinion that a POSITA would have been motivated to modify Satechi, Apple, and Shen by implementing the data ports of Liao, and thus reach the combination of Satechi, Apple, Shen and Liao that teaches each and every limitation of [4.1].

303. Therefore, as shown above, claim 4 would have been obvious in light of Satechi, Apple, Shen and Liao.

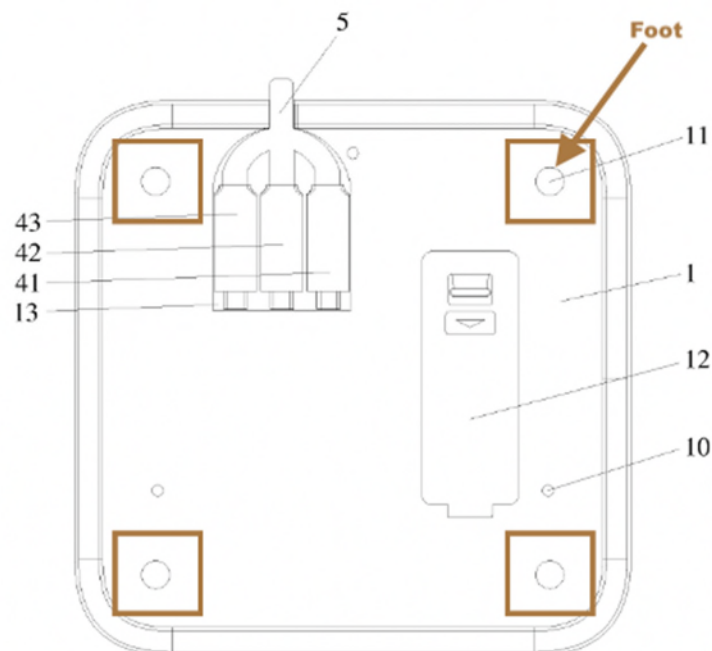
Claim 7

***[7.0] The mini-computer stand of claim 1, further comprising
[7.1] a plurality of feet coupled to the bottom side of the mini-computer stand that is opposite the top.***

304. As explained above with respect to [1.0]-[1.3] in §IV.F.2, Satechi in view of Apple, further in view of Shen teaches [7.0]. Furthermore, as explained in sections below, Liao teaches [7.1].

305. Specifically, Liao discloses that “several anti-slip rubber pads 11 are uniformly spaced on the side of the base 1 facing away from the upper cover 2. This structure, on the one hand, has several anti-slip rubber pads 11 that provide anti-slip function; on the other hand, the base 1 can be spaced apart from the plane to prevent liquid on the plane from flowing into the adapter or electronic device, thereby improving the safety and reliability of the adapter or electronic device.” Ex. 1010, [0049].

306. In addition, as shown in the following Figure 5 of Liao, Liao discloses a plurality of feet (shown in brown) coupled to the bottom side of the base docking station 1 that is opposite the top. Ex. 1010, FIG. 5.



Annotated FIG. 5 of Liao

307. It would have been routine for a POSITA to modify the stand of Satechi to include the rubber pads of Liao at the bottom “to provide anti-slip function” and “to prevent liquid on the plane from flowing into the adapter or electronic device, thereby improving the safety and reliability of the adapter or electronic device.” Ex. 1010, [0049].

308. Therefore, it is my opinion that a POSITA would have been motivated to modify Satechi, Apple, and Shen by implementing the feet of Liao, and thus reach the combination of Satechi, Apple, Shen and Liao that teaches each and every limitation of [8.1].

309. Therefore, as shown above, claim 7 would have been obvious in light of Satechi, Apple, Shen and Liao.

2. Combination of Satechi, Apple, Shen, and Liao

310. When modifying Satechi’s stand to accommodate the Mac mini M4, a POSITA would have been motivated to incorporate the distributed port and anti-slip feet teachings of Liao to feature data ports on both the front and back sides of the stand and a plurality of feet on the bottom of the stand as recited in Claims 4 and 7.

311. As discussed above, adapting the stand of Satechi for the Mac mini M4 requires structurally modifying a rear corner to enable power button access. Because this physical cutout limits the available internal volume and structural

continuity of the base docking station, there was a recognized need in the relevant field to modify the stand to optimize the placement of internal components and external data ports. A POSITA would have recognized that the distributed data port arrangement of Liao could improve the stand of Satechi. Specifically, a POSITA would have been recognized that the technical solution of Liao could optimize the placement of internal components and external data ports of the stand of Satechi because replacing the USB-C connection with additional data ports and distributing data ports on both the front side and the opposite back side would maximize available surface area, alleviate wire clutter on the user-facing front side, and provide direct and flexible connection between the stand and device on the opposite back side.

312. There were a limited number of options for standard connectivity features, all of which were well known in the prior art. It would have been routine for a POSITA to modify the stand of Satechi to include this distributed port arrangement. Because relocating or adding standard data ports to a housing is a routine technique that do not alter the primary supporting function of the stand of Satechi, this modification is a predictable use of prior art elements according to their established functions. A POSITA would have had a reasonable expectation of success in making this modification. Modifying the combination of Satechi, Apple, and Shen to include ports on both the front and rear sides of

the base docking station based on the teachings of Liao is a predictable use of prior art elements according to their established functions, representing a routine design choice that yields the predictable result.

313. Further, a POSITA would have recognized that the rubber feet of Liao could improve the stand of Satechi when it rests on a desk or similar surface while supporting the Mac mini. It was common knowledge to a POSITA that rubber feet are a well-known solution for increasing friction between the stand of Satechi and the supporting surface, thereby reducing sliding caused by cable tension, vibration, or incidental contact. A POSITA also would have been motivated to implement rubber feet of Liao to cushion the contact between the stand of Satechi and the desk and reduce the risk of scratching or marring the surface.

314. Incorporating rubber feet of Liao at the bottom of the stand of Satechi is a predictable use of prior art elements according to their established functions. Because attaching rubber pads to the bottom of a base is a standard industry practice, a POSITA would have had a reasonable expectation of success in making this routine design choice, yielding the predictable results of enhanced grip, surface protection, and overall user convenience.

H. GROUND 8: Claim 6 of the '567 Patent is rendered obvious by Satechi, Apple, Shen, and Koshiishi

1. Analysis

Claim 6

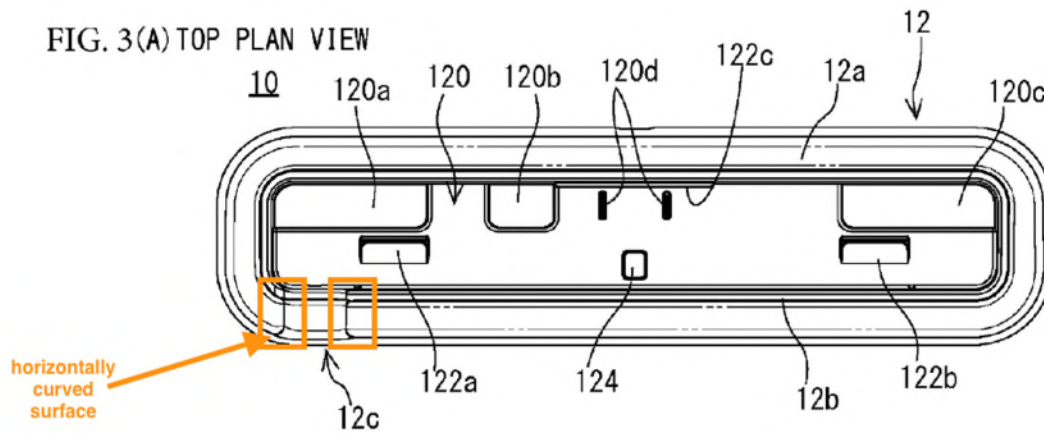
[6.0] The mini-computer stand of claim 1,”

[6.1] wherein the back corner comprises a horizontally curved surface that defines the cutaway in the top and the side portions of the back corner.

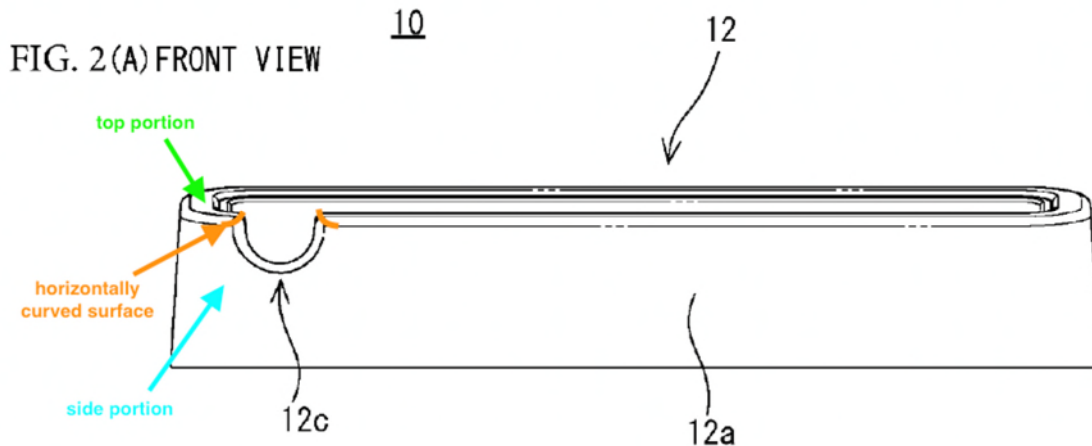
315. As detailed in §IV.I below, it is my opinion that the term “horizontally curved surface” in Claim 6 is indefinite because it fails to inform a POSITA of the claim scope with reasonable certainty. To the extent that the term is amenable to any construction that may save the claim from indefiniteness, it is my opinion that Koshiishi discloses this feature under any such reasonable interpretation.

316. As explained above with respect to [1.0]-[1.3] in §IV.F.2, Satechi in view of Apple, further in view of Shen teaches [6.0]. Furthermore, as explained in sections below, Koshiishi teaches [6.1].

317. Specifically, as shown in the following Figures 2(A) and 3(A) of Koshiishi, Koshiishi discloses that the charging stand has a horizontally curved surface that defines the notch 12c in the top and the side portions. Ex. 1007, FIG. 3(A).



Annotated FIG. 3(A) of Koshiishi



Annotated FIG. 2(A) of Koshiishi

318. A POSITA would have been motivated to implement the horizontally curved surface of the notch 12c of Koshiishi in the cutouts 540 of Shen when that surface has substantial width. Therefore, it is my opinion that a POSITA would have been motivated to modify Satechi, Apple, and Shen by implementing the horizontally curved surface of the notch 12c of Koshiishi, and thus reach the combination of Satechi, Apple, Shen and Koshiishi that teaches each and every limitation of [6.1].

319. Therefore, as shown above, claim 6 would have been obvious in light of Satechi, Apple, Shen and Koshiishi.

2. Combination of Satechi, Apple, Shen, and Koshiishi

320. As established above, Satechi, Apple, Shen, and Koshiishi are analogous art because they are from the same field of endeavor, i.e., support structures and accessories for mini-computers and electronic devices. At the very least, each of them addresses the problem of accessing underlying structural device features within a stand.

321. A POSITA would have recognized that the horizontally curved surface of the notch 12c taught by Koshiishi could improve the cutouts 540 of Shen when that cutaway surface has substantial width. It was common knowledge to a POSITA that rounding or curving an exposed edge or surface is a routine industrial-design and mechanical-design modification used to address sharp edges. This modification is a predictable use of prior art elements according to their established functions. Specifically, modifying the primary combination to include a horizontally curved surface along a relatively wide cutaway surface is a routine design choice that yields the predictable results, such as improving the visual appearance of the cutaway and reducing the likelihood of scratching a user's fingers or the device itself against a sharper exposed edge during normal use. Because this ergonomic and aesthetic refinement does not alter the primary

supporting function of the stand, nor does it hinder the cutaway's function of exposing the corresponding back bottom portion of the mini-computer, a POSITA would have had a reasonable expectation of success in implementing the horizontally curved surface of Koshiishi into the cutouts of Shen.

I. GROUND 9: Claim 6 of the '567 Patent is indefinite in view of the term "horizontally curved surface"

322. For at least the reasons stated below, it is my opinion that the term "horizontally curved surface" in Claim 6 of the '567 Patent, when viewed in light of the specification and prosecution history, fails to inform those skilled in the art about the scope of the invention with reasonable certainty.

323. First of all, Claim 1 recites "wherein a back corner from the plurality of rounded corners of the mini-computer stand comprises a cutaway in top and side portions of the back corner that does not extend through a bottom side of the mini-computer stand, which is adapted to expose a corresponding back bottom portion of the mini-computer through the cutaway when the mini-computer is placed on the top of the mini-computer stand." Ex. 1001, Claim 1. Claim 6 narrows this claim by reciting that "the back corner comprises a horizontally curved surface that defines the cutaway in the top and the side portions of the back corner." Ex. 1001, Claim 6.

324. This limitation is indefinite because the term “horizontally curved surface” is not a term of art and has no particular meaning to a POSITA in the field of the ’567 Patent. Additionally, the claim language does not provide an objective boundary that would allow a POSITA to determine with reasonable certainty whether or not a specific surface qualifies as a “horizontally curved surface.”

325. First, the term “curved” could reasonably refer to any non-flat or rounded portion of the back corner, and the claim provides no standard for separating covered shapes from uncovered ones. Second, the claim does not identify the reference plane against which “horizontal” is to be assessed. For instance, whether “horizontally” is measured relative to the supporting surface on which the stand rests, the stand’s own upper surface, or a more localized geometric feature at the corner, such as a chamfer, fillet, or transition surface. Those different reference planes would lead a POSITA to arrive at different conclusions as to what geometry qualifies as “horizontally curved.” Third, the claim does not specify which “surface” must be horizontally curved, or how that surface must relate to the cutaway in order to “define[] the cutaway.” Because the same cutaway structure may appear curved from one viewpoint yet straight from another, depending on the frame of reference used to evaluate it, a POSITA would reasonably understand the phrase in multiple ways.

326. The specification and prosecution history provide no guidance whatsoever, in fact, neither the specification nor the prosecution history ever used the term “horizontally curved surface.” *See* Ex. 1001. Because there is no disclosure concerning this limitation in the specification or prosecution history, it is impossible for a POSITA to select among multiple equally reasonably alternative meaning of “horizontally curved surface.” Thus, the inventors provide no guidance to a POSITA on which shapes are intended to fall within the scope of Claim 6 and which do not. It is my opinion that the term “horizontally curved surface” therefore does not define the scope of Claim 6 with reasonable certainty.

327. For these reasons, it is my opinion that Claim 6 of the '567 Patent is indefinite.

V. CONCLUSION

328. 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.

329. I declare under penalty of perjury that the foregoing is true and accurate to the best of my knowledge, information and belief.

Exhibit A to Ex. 1003

HIMANSHU POKHARNA, PhD (PURDUE), MBA (WHARTON)

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Serial entrepreneur with 25 years of global experience in a variety of leadership roles. Emphasis on energy, materials and thermal technologies. Expertise in creating product strategy by mapping technology competencies to emerging market opportunities. Comfortable in deepest of technical discussions to board level business deliberations. Track record of successful introduction of new energy/mechanical/thermal technology in a broad array of computing, energy and Mil/aerospace products. Experienced in building and leading teams across geographies. Experienced in licensing and as an Expert Witness in patent disputes. Over 120 issued/pending patents, 5 journal publications, and many conference, industry presentations.

PROFESSIONAL EXPERIENCE

Deeia Inc. Founder/Principal

08/10-Present

A thermal consulting business with leading companies and startups as clients. Also developed a new Loop Thermosyphon technology and metallic TIM Technology for application in data center cooling.

- Developed thermal architecture of several products from computing to lighting, drones and robots.
- Provided expert witness services for thermal management related IP lawsuits with focus on liquid cooling.

Developed a patent pending loop thermosyphon two phase cooling system with application in server, 5G cabinet cooling, EV system cooling, battery cooling. Loop Thermosyphon has liquid cooling performance but is a passive system with 20 year lifetime. Performance validated by a Fortune 50 company.

Inficold India Pvt. Ltd. – Co-founder and Board Member

04/15-Present

A startup developing and commercializing thermal energy storage products.

- Founded and raised \$3.5 M in seed and grant funding. Founding CEO, but with the company moving to India in 2017, continued the responsibility for technology and strategic direction as a board member.
- Built a 70+ people team for developing a patented energy storage product which can attach to any refrigeration system and store energy in low cost phase change media to shift power consumption to low tariff duration or enable off grid solar based cold chain for milk and fruits/vegetables.

Deep Materials Inc. CEO and Director

01/19-Present

A Thermal materials company with focus on high performance Thermal Interface Materials (TIMs) & Heat Sinks

- Developed a variety of thermally conductive “gels” for application in consumer electronics, computing and automotive parts. Qualified them at various leading brands for their application in data center, consumer electronics, laptops, automotives etc.
- Setup a factory in China. Also setup a team there to interface with customers (FATP), and provide support at Foxconn (China, Vietnam), Quanta (China, Thailand), Chicony etc.

Sheetak Inc. Co-Founder, Board Member and VP Business Development

01/09-04/15

A Startup applying an innovative Peltier technology for power generation, and cooling.

- Raised >\$5M in funding and licensing revenues. Raised >\$10M in non-dilutive R&D grants from US DoE (ARPA-e)/DoD. Responsible for teaming, proposal, contract negotiations, and project management.
- Licensed a cooling technology to Godrej and Boyce India for an ultra-cheap refrigerator for the masses in India. The resulting refrigerators received coverage in the *Economist*, *WSJ* and *HBR*. Responsible for end to end delivery (engineering, design, China supply chain and component cost negotiations).
- Negotiated multiple licensing deals at ~\$ 1 M in licensing fees/royalties. Customers included two PE Controlled companies (Igloo and Oasis Water Coolers), and a large appliance company in the US.

Ventiva Inc. VP Applications Engineering 12/08-10/09
Advisor/Consultant/VP (Various roles over time) 16-Present

A startup developing air moving technology (no moving parts fan) with a licensing business model.

- Responsible for providing product direction, market analysis, customer analysis, & thermal engineering. Convinced the company to focus on tablet & wireless charger cooling for its first product.
- Led product evaluation (as a part of a licensing discussions) with a large Korean display maker. Currently working with the CEO and in house counsel on licensing discussions with an large consumer brand co.

k-Technology Corp. VP Product Development 07/07-12/08

Leadership role in a defense hardware company, based upon an innovative high thermal conductivity material technology. Responsible for new product development.

- Led many SBIR projects for new product applications based upon the core materials technology.
- Evaluated partnership/acquisition opportunities and eventually assisted the CEO in selling the business to a larger player in the value chain.

Intel Corporation - Mobility Group 07/00-07/07

Group Manager ('05-'07), Thermal Technology Manager ('02-'05), Staff Engineer ('00-'02)

- Overall responsibility for thermal, mechanical technology development and deployment for Intel's >\$12.5 B Mobile Products Group (now part of PC Client Group). Built and managed a cross functional team of 27 mechanical/thermal engineers and program managers across the globe (US, Taiwan, Japan, India).
- Responsible for developing team strategic plan, providing leadership, mentoring of managers and managing ~\$4 M annual budget. The team defined Intel's laptop PC thermal mechanical roadmap as well as develops, enables and communicates mechanical design of future laptop PCs. Most of the laptops today are based on the thermal/mechanical architecture originally developed by this team.
- Established Intel's mobile thermal technology advancement program. Formulated and managed collaborative development programs and investment in >15 supply chain partners for advancement in thermal component technology. The resulting products have led to 50% reduction in laptop thickness.
- Initiated heat pipe development programs with five of the leading heat pipe suppliers. Objective was to reduce evaporator and condenser resistances, reduce thickness to support thin laptops.
- Advised Intel Capital for investment in thermal, mechanical, fuel-cell and battery startups. Evaluated >15 investment opportunities. Managed Intel Capital investment in a company.
- Intel IP committee member. Responsible for evaluating for patent filing decision.
- Developed platform approach to future laptop designs by mechanical and thermal design of each part of the laptop, from CPU package, thermal solution, skins, keyboard, radios, board, display, and light source.

Applied Materials Inc. Senior Mechanical Engineer 07/97-07/00

- Lead mechanical engineer for new product development group of low-k dielectric managing multiple hardware projects. Led cross-functional team for alpha exit of low-k CVD product.

EDUCATION

MBA, THE WHARTON SCHOOL, UNIVERSITY OF PENNSYLVANIA	2006
PhD, PURDUE UNIVERSITY, Nuclear Engineering	1997
BS, MS,¹ INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY, Mechanical Engineering	1990, 1992

¹ The degrees were Bachelor's of Technology and Master's of Technology, equivalent to a B.S. and an M.S. in the United States, respectively.

DETAILS OF THE PRESENTATIONS PAPPERS, AND PATENTS

KEYNOTE/INVITED ADDRESSES & PAPERS²,

1. Pokharna, H., "Application of Thermal Management in Energy Devices", Delivered at the Annual Taiwan Thermal Management Association Meeting in Taipei, April 2011.
2. Pokharna, H., "Solid State Energy Converters Coupled with Heat Pipes for Refrigeration and Power Generation", Fujikura Annual Forum, Nov 2010.
3. Pokharna, H., "Notebook Thermal Technology: Need for Standardized Metrology – Call to Action for Taiwan Thermal Management Association" Delivered at the Annual Taiwan Thermal Management Association Meeting in Taipei, April 10, 2007.
4. Mongia, R; Kuroda, M., and Pokharna, H., "Heat Pipe Needs in Future Mobile Platforms", Keynote address to the 14th International Heat Pipe Conference, Florianópolis, Brazil, 2007.
5. Machiroutu, S.V., Kluge, B., Kuroda, M., and Pokharna, H., "Design and Test Methodologies of Use of Heat Pipes in Laptop PCs," Keynote address to the 8th International Heat Pipe Symposium, Kumamoto, Japan, 2006.
6. *Pokharna, H , et. al. , Microchannel Cooling in Computing Platforms: Performance Needs and Challenges in Implementation", Keynote address to the second ASME-JSME International Microchannel Conference, at Rochester, NY, 2004. Published: Proceedings of the Second International Conference on Microchannels and Minichannels (ICMM2004). 10.1115/ICMM2004-2325. Page 109-118.

SELECTED JOURNAL PUBLICATIONS

7. *Chalise, D., Tee, R., Zeng, Y., Kaur, S., Pokharna, H., & Prasher, R. S. (2023). High throughput, spatially resolved thermal properties measurement using attachable and reusable 3ω sensors. *Review of Scientific Instruments*, 94(9).
8. *Mongia, R., Bhattacharya, A., Pokharna, H., "Skin Cooling and Other Challenges in Future Mobile Form Factor Computing Devices", *Microelectronics Journal* – vol. 39, pp. 992-1000, 2008.
9. *Ishii M., Revankar S.T., Pokharna H., et. al. Scaling of the Purdue University Multidimensional Integral Test Assembly (PUMA) for GE SBWR. *Nuclear Engineering and Design*, Vol. 186, 1998, pp. 177-211.
10. *Pokharna H., Mori M., and Ransom V.H., "The Particle Fluid Model and Using Lagrangian Representation in Two-Phase Flow Modeling." *Nuclear Engineering and Design*, Vol. 175, 1997, pp. 59-69.
11. *Pokharna H., Mori M., and Ransom V.H, "Regularization of Two-Phase Flow Models- A comparison of Mathematical and Numerical Approaches" *Journal of Computational Physics*, Vol. 134, July, 1997.

PRESENTATIONS AND OTHER PUBLICATIONS

12. Pokharna, H. (2025, March). Ultra-low Resistance Bonded Flexible Metal (FlexiMetal™) Thermal Interface Materials for Fast Transient Response in Mobile Computing Devices. In *2025 41st Semiconductor Thermal Measurement, Modeling & Management Symposium (SEMI-THERM)* (pp. 74-78). IEEE.

² `Papers, and presentations marked with * were peer reviewed.

13. Raghupathy, A., Huang, R., Guu, J., Kaliyamoorthy, S., Lee, J., Chiang, R. Z., & Pokharna, H. (2025, March). Overcoming Thermal and Electromagnetic Challenges with a Single Dispensable Multifunctional Material for Consumer Electronics. In *2025 41st Semiconductor Thermal Measurement, Modeling & Management Symposium (SEMI-THERM)* (pp. 127-131). IEEE.
14. *K. Varadarajan, R. K. Mongia, H. Pokharna, J. Pan, K. Tien and M. Wu, "Lid cooling for notebooks," 2008 11th Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems, Orlando, FL, 2008, Published: *11th Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems, Orlando, FL, 2008*, pp. 591-597. pp. 591-597.
15. *Mongia, R.; Machiroutu, S., Pokharna, H.; "Mobile Thermal Challenges in Future Platforms", Presented at Thermes II, Santa Fe, NM, 2007. Published: *Thermal Challenges in Next Generation Electronic Systems (THERMES II 2007)* Edited by Suresh V. Garimella, Amy S. Fleischer, Volume 39, Issue 7, Pages 929-1030 (July 2008)
16. *Machiroutu, S.V., Pokharna, H., Kuroda, M., "Challenges and Advances of Heat Pipes in Cooling Notebook Systems", Presented at Interpack Conference, Vancouver, British Columbia, Canada, July 8-12, 2007. Published: *Proc. ASME. 42770; ASME 2007 InterPACK Conference, Volume 1. IPACK2007-33249. Pages: 677-687*
17. *Kuroda, M., Machiroutu, S.V., and Pokharna, H., "Use of Heat Pipes in Multiple Component Cooling in Laptop PCs," 8th International Heat Pipe Symposium, Kumamoto, Japan, 2006. Published:: *Heat Pipe: Science and Technology ; Proceedings of the 8th International Heat Pipe Symposium*, Edited by Hideaki Imura, Nihon-Hito-Paipu-Kyōkai September 24 - 27, 2006 Kumamoto, Japan.
18. *Khandani,S., Pokharna, H., Machiroutu,S., DiStefano, E., "Remote Heat Pipe Based Heat Exchanger performance in Notebook Cooling", Presented at the ASME Summer Heat Transfer Conference, San Francisco, 2005. Published: *Heat Transfer: Volume 4 ():715-719. doi:10.1115/HT2005-72069* Pages – 715-719.
19. *DiStefano, E., Pokharna, H. and Machiroutu, S.V., "Raising the Bar for Heat Pipes in Notebook Cooling," 13th International Heat Pipe Conference, Shanghai, China, September 21–25, 2004. Published: *13th International Heat Pipe Conference: September 21-25, 2004, Shanghai, China* Edited by: Zhongguo Kong, Jian Ji, Shu Yan, Jiu Yuan. China Academy of Space Technology, 2004
20. *Pokharna-H; Ransom-VH; Mori-M "Extension of the particle-fluid model for transient analysis of bubbly two-phase flow to branched flow passages". Eighth International Topical Meeting on Nuclear Reactor Thermal-Hydraulics. NURETH-8. Published:: *New Horizons in Nuclear Reactor Thermal-Hydraulics. Atomic Energy Soc. Japan, Tokyo, Japan; 1997; vol–1 (xxi+xv+1830) pp. p.558-65.*
21. *Pokharna H., and Ransom V. H., "Development of a Particle-Fluid Model for Transient Analysis of Bubbly Two-phase Flows in Parallel Channels." Presented at the International Mechanical Engineers Conference and Exposition, Atlanta, November, 1996. Published: *ASME FED, Vol-242.*
22. *Pokharna H., Mori M. and Ransom V.H., "The Particle Fluid Model and Using Lagrangian Representation in Two-Phase Flow Modeling.", Presented at the Fourth US-Japan Conference in Tsukuba, July 1996.
23. Ishii M., Revankar S.T., Pokharna H. et. al. "Scientific Design of Purdue University Multi-Dimensional Integral Test Assembly (PUMA) for GE SBWR.", NUREG/ CR-6309, (National report published by Nuclear Regulatory Commission). 1996. Published: Proceedings of the

7th International Meeting on Nuclear Reactor Thermal-Hydraulics (NURETH 7), Sep. 10-15, 1995, Saratoga Springs, New York.

24. *Ishii M., Revankar S.T., Pokharna H., and Ransom V.H., "Scaling for Integral Simulation of Thermalhydraulic Phenomena in SBIR during LOCA.", Presented at NURETH-7, Saratoga Springs, NY, Sep10-15, 1995. Published: Proceedings of the 7th International Meeting on Nuclear Reactor Thermal-Hydraulics (NURETH 7), Sep. 10-15, 1995, Saratoga Springs, New York. Compiled by: R. C. Block, F. Feiner. pp: 1272-1290/
25. *Pokharna H., Lele S., Wang W., Ishii M., Ransom V.H., "Investigation of Scaling Criterion Using RELAP5 for SBWR Integral Test Facility Design." Presented at ANS Annual Meeting, San Francisco, Nov14-18, 1993. Published: *Transactions of the American Nuclear Society*, 540-541.
26. *Pokharna H. and Doshi J.B., "Analysis of Dynamic Instability in Boiling Systems.", Presented at Winter Annual Meeting of ASME, Los Angeles, 1992. Published: Proceedings of Winter Annual Meeting, Anaheim, CA, USA 11/08-13/92. Pages: 1-9.

PATENTS

Issued US patents:

Publication Number	Title
US12453042	Metallic thermal interface materials and associated devices, systems, and methods
US-11943899	Composite thermal interface materials and associated devices, systems, and methods
US-11744044	Loop thermosyphon devices and systems, and related methods
US9903621B1	Cooling system with thermal battery
US9574832B2	Enabling an aluminum heat exchanger with a working fluid
US8043703B2	Thermally conductive graphite reinforced alloys
US7494628B2	Apparatus for abatement of by-products generated from deposition processes and cleaning of deposition chambers
US7443670B2	Systems for improved blower fans
US7308931B2	Heat pipe remote heat exchanger (RHE) with graphite block
US7300244B2	Cooling fan noise reduction apparatus, systems, and methods
US7269005B2	Pumped loop cooling with remote heat exchanger and display cooling
US7243497B2	Apparatus to use a refrigerator in mobile computing device
US7288895B2	System to improve display efficiency based on recycling local heat source
US7283360B2	Enhanced flow channel for component cooling in computer systems
US7281388B2	Apparatus to use a refrigerator in mobile computing device
US7272006B2	IC coolant microchannel assembly with integrated attachment hardware
US7259965B2	Integrated circuit coolant microchannel assembly with targeted channel configuration
US7203064B2	Heat exchanger with cooling channels having varying geometry
US7193316B2	Integrated circuit coolant microchannel with movable portion
US7123479B2	Enhanced flow channel for component cooling in computer systems
US7104313B2	Apparatus for using fluid laden with nanoparticles for application in electronic cooling
US7060234B2	Process and apparatus for abatement of by products generated from deposition processes and cleaning of deposition chambers
US7048038B2	Increased thermal capability of portable electronic device in stationary or docked mode
US7031159B2	Parallel heat exchanger for a component in a mobile system
US7023697B2	Actuation membrane for application to a card slot of a system

US6958912B2	Enhanced heat exchanger
US6906919B2	Two-phase pumped liquid loop for mobile computer cooling
US6899763B2	Lid cooling mechanism and method for optimized deposition of low-K dielectric using TR methylsilane-ozone based processes
US6937472B2	Apparatus for cooling heat generating components within a computer system enclosure
US6903930B2	Parallel heat exchanger for a component in a mobile system
US6845625B1	Reversible two-phase and refrigeration loop
US6837057B2	Docking station to cool a computer
US6845008B2	Docking station to cool a notebook computer
US6837058B1	Tablet air cooling dock
US6801430B1	Actuation membrane to reduce an ambient temperature of heat generating device
US6795311B2	Method and apparatus for cooling portable computers
US6674640B2	Increased thermal capability of portable electronic device in stationary or docked mode
US6646874B2	Mobile computer system with detachable thermoelectric module for enhanced cooling capability in a docking station
US6596343B1	Method and apparatus for processing semiconductor substrates with hydroxyl radicals
US6595022B2	Computer system having a refrigeration cycle utilizing an adsorber/desorber for purposes of compression
US6528116B1	Lid cooling mechanism and method for optimized deposition of low-k dielectric using tri methylsilane-ozone based processes
US6506994B2	Low profile thick film heaters in multi-slot bake chamber
US6415612B1	Method and apparatus for external cooling an electronic component of a mobile hardware product, particularly a notebook computer, at a docking station having a thermoelectric cooler
US6358327B1	Method for endpoint detection using throttle valve position
US6255222B1	Method for removing residue from substrate processing chamber exhaust line for silicon-oxygen-carbon deposition process

Applied/Pending US Patents (Published):

Publication Number	Title
US20240389274A1	Composite thermal interface materials and associated devices, systems, and methods
US20220320833A1	Ionic Air Flow Generator, With Emitter And Collector Stripes
US20220344137A1	Heat transfer using ionic pumps
US-20220210945-A1	Ionic wind generator
US20160133814A1	FUEL-FLEXIBLE THERMAL POWER GENERATOR FOR ELECTRIC LOADS
US20150155413A1	SOLAR THERMOELECTRIC GENERATOR WITH INTEGRATED SELECTIVE WAVELENGTH ABSORBER
US20140318152A1	METHOD AND APPARATUS FOR THERMOELECTRIC COOLING OF FLUIDS
US20130048250A1	HEAT PIPE MADE OF COMPOSITE MATERIAL AND METHOD OF MANUFACTURING THE SAME
US20090255660A1	High Thermal Conductivity Heat Sinks With Z-Axis Inserts
US20090166014A1	Enabling an aluminum heat exchanger with a working fluid
US20090135560A1	HIGH EFFICIENCY FLUID MOVERS
US20090075120A1	Thermally conductive graphite reinforced alloys
US20090002939A1	Systems and methods for fan speed optimization
US20080130221A1	Thermal hinge for lid cooling
US20070284089A1	Method, apparatus and system for carbon nanotube wick structures

US20070227707A1	Method, apparatus and system for providing for optimized heat exchanger fin spacing
US20070217147A1	INTEGRATED CIRCUIT COOLANT MICROCHANNEL ASSEMBLY WITH TARGETED CHANNEL CONFIGURATION
US20070146993A1	Method, apparatus and computer system for enhancement of thermal energy transfer
US20070177349A1	High efficiency fluid mover
US20070076376A1	Method, apparatus and computer system for providing for the transfer of thermal energy
US20070077139A1	Cooling fan noise reduction apparatus, systems, and methods
US20070076374A1	IC coolant microchannel assembly with integrated attachment hardware
US20070002541A1	Enhanced flow channel for component cooling in computer systems
US20060226539A1	Integrated circuit coolant microchannel assembly with targeted channel configuration
US20060198769A1	Apparatus for abatement of by-products generated from deposition processes and cleaning of deposition chambers
US20060131733A1	Integrated circuit coolant microchannel with movable portion
US20060152900A1	Systems for improved blower fans
US20060113066A1	Heat exchanger configuration for pumped liquid cooling computer systems
US20060113064A1	Heat pipe remote heat exchanger (RHE) with graphite block
US20050285261A1	Thermal management arrangement with channels structurally adapted for varying heat flux areas
US20050284166A1	Apparatus to use vapor compression refrigeration in a mobile computing device
US20050217278A1	Apparatus to use a magnetic based refrigerator in mobile computing device
US20050219819A1	Methods to improve heat exchanger performance in liquid cooling loops
US20050217827A1	Apparatus to use a refrigerator in mobile computing device
US20050217279A1	Apparatus to use a refrigerator in mobile computing device
US20050139345A1	Apparatus for using fluid laden with nanoparticles for application in electronic cooling
US20050141195A1	Folded fin microchannel heat exchanger
US20050146852A1	Parallel heat exchanger for a component in a mobile system
US20050145371A1	Thermal solution for electronics cooling using a heat pipe in combination with active loop solution
US20050128702A1	Heat exchanger with cooling channels having varying geometry
US20050122688A1	Enhanced flow channel for component cooling in computer systems
US20050103480A1	Enhanced heat exchanger
US20050111183A1	Pumped loop cooling with remote heat exchanger and display cooling
US20050104526A1	System to improve display efficiency based on recycling local heat source
US20050099775A1	Pumped liquid cooling for computer systems using liquid metal coolant
US20050126761A1	Heat pipe including enhanced nucleate boiling surface
US20050068724A1	Two-phase pumped liquid loop for mobile computer cooling
US20050058867A1	Integrated platform and fuel cell cooling
US20050058866A1	Integrated platform and fuel cell cooling
US20050013116A1	Actuation membrane for application to a card slot of a system
US20040261421A1	TABLET AIR COOLING DOCK
US20040223302A1	Apparatus for cooling heat generating components within a computer system enclosure
US20040201959A1	Increased thermal capability of portable electronic device in stationary or docked mode
US20040123604A1	Docking station to cool a computer
US20040123977A1	External attachable heat exchanger
US20040125562A1	Parallel heat exchanger for a component in a mobile system
US20030221621A1	Method and apparatus for processing semiconductor substrates with hydroxyl radicals

US20030123223A1	Method and apparatus for cooling portable computers
US20030066482A1	Lid cooling mechanism and method for optimized deposition of low-K dielectric using TRI methylsilane-ozone based processes
US20020190051A1	LOW PROFILE THICK FILM HEATERS IN MULTI-SLOT BAKE CHAMBER
US20030017087A1	Process and apparatus for abatement of by products generated from deposition processes and cleaning of deposition chambers
US20030002252A1	Increased thermal capability of portable electronic device in stationary or docked mode
US20030000231A1	Computer system having a refrigeration cycle utilizing an adsorber/desorber for purposes of compression
US20020186531A1	Mobile computer system with detachable thermoelectric module for enhanced cooling capability in a docking station
US20020141152A1	Docking station to cool a notebook computer

Issued/Applied/Pending International Patents (Published):

Publication Number	Title
EP1665434B1	INTEGRATED PLATFORM AND FUEL CELL COOLING INTEGRIERTE PLATTFORM UND BRENNSTOFFZELLENKÜHLUNG REFROIDISSEMENT INTEGRE DE PLATE-FORME ET DE PILE A COMBUSTIBLE
EP1148150B1	Method and apparatus for processing semiconductor substrates with hydroxyl radicals Verfahren und Vorrichtung zur Behandlung von Halbleitersubstraten mit Hydroxylradikalen Procédé et appareillage pour le traitement des substrats de sémiconducteur par des radicaux hydroxylés
EP1671218B1	REVERSIBLE TWO-PHASE AND REFRIGERATION LOOP REVERSIBLE ZWEIFHASSEN- UND KÜHLSCHLEIFE BOUCLE DE REFRIGERATION ET A DEUX PHASES REVERSIBLE
EP1623612B1	AN ACTUATION MEMBRANE FOR APPLICATION TO A CARD SLOT OF A SYSTEM EINE BETÄTIGUNGSMEMBRAN ZUR VERWENDUNG IN EINEM SYSTEMSKARTENSCHLITZ MEMBRANE D'ENTRAINEMENT S'APPLIQUANT SUR UNE POSITION D'ENFICHAGE DE CARTE DANS UN SYSTEME
EP2807432A1	METHOD AND APPARATUS FOR THERMOELECTRIC COOLING OF FLUIDS VERFAHREN UND VORRICHTUNG ZUR THERMOELEKTRISCHEN KÜHLUNG VON FLÜSSIGKEITEN PROCÉDÉ ET APPAREIL DE REFROIDISSEMENT THERMOÉLECTRIQUE DE FLUIDES
EP1148150A3	Method and apparatus for processing semiconductor substrates with hydroxyl radicals Verfahren und Vorrichtung zur Behandlung von Halbleitersubstraten mit Hydroxylradikalen Procédé et appareillage pour le traitement des substrats de sémiconducteur par des radicaux hydroxylés
EP1665434A2	INTEGRATED PLATFORM AND FUEL CELL COOLING INTEGRIERTE PLATTFORM UND BRENNSTOFFZELLENKÜHLUNG REFROIDISSEMENT INTEGRE DE PLATE-FORME ET DE PILE A COMBUSTIBLE
EP1671218A2	REVERSIBLE TWO-PHASE AND REFRIGERATION LOOP REVERSIBLE ZWEIFHASSEN- UND KÜHLSCHLEIFE BOUCLE DE REFRIGERATION ET A DEUX PHASES REVERSIBLE
EP1623612A2	AN ACTUATION MEMBRANE FOR APPLICATION TO A CARD SLOT OF A SYSTEM EINE BETÄTIGUNGSMEMBRAN ZUR VERWENDUNG IN EINEM SYSTEMSKARTENSCHLITZ MEMBRANE D'ENTRAINEMENT S'APPLIQUANT SUR UNE POSITION D'ENFICHAGE DE CARTE DANS UN SYSTEME

EP1148150A2	Method and apparatus for processing semiconductor substrates with hydroxyl radicals Verfahren und Vorrichtung zur Behandlung von Halbleitersubstraten mit Hydroxylradikalen Procédé et appareillage pour le traitement des substrats de semiconducteur par des radicaux hydroxylés
EP1079000A1	Method for removing residue from an exhaust line Verfahren zur Entfernung von Absetzungen in einer Abgasleitung Procédé d'élimination des dépôts dans une ligne d'échappement
EP1077274A1	Method for depositing thin films in particular of a low-k dielectric Verfahren zur Abscheidung von dünnen Schichten insbesondere eines Dielektrikums mit niedrigem k-Wert Méthode de déposition des couches minces notamment d'un matériau diélectrique à faible constante diélectrique
WO2013173450A9	INTEGRATED SELECTIVE WAVELENGTH ABSORBER SOLAR THERMOELECTRIC GENERATOR GÉNÉRATEUR THERMOÉLECTRIQUE SOLAIRE AVEC ABSORBEUR DE LONGUEUR D'ONDE SÉLECTIF INTÉGRÉ
WO2013074057A1	METHOD AND APPARATUS FOR THERMOELECTRIC COOLING OF FLUIDS PROCÉDÉ ET APPAREIL DE REFROIDISSEMENT THERMOÉLECTRIQUE DE FLUIDES
WO2009035666A3	THERMALLY CONDUCTIVE GRAPHITE REINFORCED ALLOYS ALLIAGES THERMO-CONDUCTEURS RENFORCÉS PAR DU GRAPHITE
WO2009035666A2	THERMALLY CONDUCTIVE GRAPHITE REINFORCED ALLOYS ALLIAGES THERMO-CONDUCTEURS RENFORCÉS PAR DU GRAPHITE
WO2008079430A3	METHOD, APPARATUS AND SYSTEM FOR CARBON NANOTUBE WICK STRUCTURES PROCÉDÉ, APPAREIL ET SYSTÈME POUR STRUCTURES EN RÉSEAU CAPILLAIRE À NANOTUBES DE CARBONE
WO2008079430A9	METHOD, APPARATUS AND SYSTEM FOR CARBON NANOTUBE WICK STRUCTURES PROCÉDÉ, APPAREIL ET SYSTÈME POUR STRUCTURES EN RÉSEAU CAPILLAIRE À NANOTUBES DE CARBONE
WO2008079430A2	METHOD, APPARATUS AND SYSTEM FOR CARBON NANOTUBE WICK STRUCTURES PROCÉDÉ, APPAREIL ET SYSTÈME POUR STRUCTURES EN RÉSEAU CAPILLAIRE À NANOTUBES DE CARBONE
WO2008008085A3	IC COOLANT MICROCHANNEL ASSEMBLY WITH INTEGRATED ATTACHMENT HARDWARE ENSEMBLE À MICRO-CANAUX DE RÉFRIGÉRANT DE CIRCUIT INTÉGRÉ AVEC MATÉRIEL DE FIXATION INTÉGRÉ
WO2008008085A2	IC COOLANT MICROCHANNEL ASSEMBLY WITH INTEGRATED ATTACHMENT HARDWARE ENSEMBLE À MICRO-CANAUX DE RÉFRIGÉRANT DE CIRCUIT INTÉGRÉ AVEC MATÉRIEL DE FIXATION INTÉGRÉ
WO2007062208A1	HIGH EFFICIENCY FLUID MOVER DISPOSITIF DE DEPLACEMENT DE LIQUIDE A HAUT RENDEMENT
WO2007041123A1	IC COOLANT MICROCHANNEL ASSEMBLY WITH INTEGRATED ATTACHMENT HARDWARE ENSEMBLE MICROCANAL DE REFROIDISSEMENT A CIRCUIT INTEGRE AVEC MATERIEL JOINT
WO2006074447A3	SYSTEMS FOR IMPROVED BLOWER FANS SYSTEMES POUR VENTILATEURS AMELIORES
WO2005033917A8	REVERSIBLE TWO-PHASE AND REFRIGERATION LOOP BOUCLE DE REFRIGERATION ET A DEUX PHASES REVERSIBLE

WO2006074447A2	SYSTEMS FOR IMPROVED BLOWER FANS SYSTEMES POUR VENTILATEURS AMELIORES
WO2005029626A3	INTEGRATED PLATFORM AND FUEL CELL COOLING REFROIDISSEMENT INTEGRE DE PLATE-FORME ET DE PILE A COMBUSTIBLE
WO2005051065A3	PUMPED LIQUID COOLING FOR COMPUTER SYSTEMS USING LIQUID METAL COOLANT REFROIDISSEMENT POUR SYSTEMES INFORMATIQUES PAR LIQUIDE DE REFROIDISSEMENT METALLIQUE POMPE
WO2005033917A3	REVERSIBLE TWO-PHASE AND REFRIGERATION LOOP BOUCLE DE REFRIGERATION ET A DEUX PHASES REVERSIBLE
WO2005067038A1	FOLDED FIN MICROCHANNEL HEAT EXCHANGER ECHANGEUR DE CHALEUR A MICROCANAU A AILETTE REPLIEE
WO2005033917A2	REVERSIBLE TWO-PHASE AND REFRIGERATION LOOP BOUCLE DE REFRIGERATION ET A DEUX PHASES REVERSIBLE
WO2005051065A2	PUMPED LIQUID COOLING FOR COMPUTER SYSTEMS USING LIQUID METAL COOLANT REFROIDISSEMENT POUR SYSTEMES INFORMATIQUES PAR LIQUIDE DE REFROIDISSEMENT METALLIQUE POMPE
WO2005029626A2	INTEGRATED PLATFORM AND FUEL CELL COOLING REFROIDISSEMENT INTEGRE DE PLATE-FORME ET DE PILE A COMBUSTIBLE
WO2004103048A3	AN ACTUATION MEMBRANE FOR APPLICATION TO A CARD SLOT OF A SYSTEM MEMBRANE D'ENTRAINEMENT S'APPLIQUANT SUR UNE POSITION D'ENFICHAGE DE CARTE DANS UN SYSTEME
WO2004103048A2	AN ACTUATION MEMBRANE FOR APPLICATION TO A CARD SLOT OF A SYSTEM MEMBRANE D'ENTRAINEMENT S'APPLIQUANT SUR UNE POSITION D'ENFICHAGE DE CARTE DANS UN SYSTEME
DE602004008615T2	EINE BETÄTIGUNGSMEMBRAN ZUR VERWENDUNG IN EINEM SYSTEMKARTENSCHLITZ
DE112006000130B4	Lüfteranordnung für Kühlsysteme
DE112006000130T5	Systeme für verbesserte Kühleinrichtungen, wie Lüfter
DE112007001304T5	Verfahren, Vorrichtung und System für Kohlenstoffnanoröhrendochtstrukturen
JP2002064095A	METHOD AND DEVICE FOR PROCESSING SEMICONDUCTOR SUBSTRATE WITH HYDROXYL RADICAL The processing method and apparatus of a semiconductor substrate using a hydroxyl radical
JP2001140076A	IMPROVED METHOD FOR REMOVING RESIDUE FROM EXHAUST LINE OF SUBSTRATE TREATMENT CHAMBER TO DEPOSIT SILICON- OXYGEN-CARBON The method improved in order to remove residue from the gas discharge line of the substrate treating chamber which performs the deposition process of silicon silicone- oxygen-carbon
KR1024757B1	METHOD, APPARATUS AND SYSTEM FOR CARBON NANOTUBE WICK STRUCTURES The method for the carbon nanotube wick structure, and the apparatus and system.
KR715074B1	METHOD AND APPARATUS FOR PROCESSING SEMICONDUCTOR SUBSTRATES WITH HYDROXYL RADICALS METHOD AND APPARATUS FOR PROCESSING SEMICONDUCTOR SUBSTRATE WITH HYDROXYL RADICAL A method and apparatus for processing the semiconductor substrate as the hydroxyl radical.
KR696030B1	IMPROVED METHOD FOR REMOVING RESIDUE FROM SUBSTRATE PROCESSING CHAMBER EXHAUST LINE FOR SILICON-OXYGEN-CARBON DEPOSITION PROCESS METHOD FOR REMOVING RESIDUE FROM EXHAUST LINE The method for removing the residue from the substrate processing chamber exhaust line of the silicon-oxygen - carbon vapor deposition process.

KR2009009927A	METHOD, APPARATUS AND SYSTEM FOR CARBON NANOTUBE WICK STRUCTURES The method for the carbon nanotube wick structure, and the apparatus and system.
KR2006006961A	AN ACTUATION MEMBRANE FOR APPLICATION TO A CARD SLOT OF A SYSTEM The actuation membrane for applying to the card slot of the system.
KR2001021403A	METHOD FOR REMOVING RESIDUE FROM EXHAUST LINE
CN101438402A	Method, apparatus and system for carbon nanotube wick structures
CN101317265A	IC coolant microchannel assembly with integrated attachment hardware IC coolant micro-channel assembly with integrated connecting component
CN101133377A	Systems for improved blower fans
CN101015082A	Integrated platform and fuel cell cooling Cooling of integration platform and fuel cell
CN1882900A	Reversible two-phase and refrigeration loop a reversible two-phase and refrigeration loop
CN1799297A	An actuation membrane for application to a card slot of a system driving film for application to the system slot
CN101438402B	Method, apparatus and system for carbon nanotube wick structures Method, device and system for carbon nano-tube core structure.
CN1799297B	An actuation membrane for application to a card slot of a system applied to the system slot of driving film
CN101133377B	Systems for improved blower fans for improved blower fan system
CN101317265B	IC coolant microchannel assembly with integrated attachment hardware with integrated connection part of IC coolant micro-channel assembly
CN100565996C	Integrated platform and fuel cell cooling Cooling of integration platform and fuel cell
CN100447707C	Reversible two-phase and refrigeration loop Method and system for reversible switching of two-phase and refrigeration loop
TWM502162U	Composite material heat pipe
TW201309997A	Composite material heat pipe and manufacturing method thereof
TWI372138B	Heat pipe, apparatus and system with carbon nanotube wick structures
TWI324296B	Systems for improved blower fans
DE60139912D1	Verfahren und Vorrichtung zur Behandlung von Halbleitersubstraten mit Hydroxylradikalen
DE602004022566D1	REVERSIBLE ZWEIFHASEN- UND KÜHLSCHLEIFE
TWI315463B	Ic coolant microchannel assembly with integrated attachment hardware
TW200806576A	Method, apparatus and system for carbon nanotube wick structures
DE602004008615D1	EINE BETÄTIGUNGSMEMBRAN ZUR VERWENDUNG IN EINEM SYSTEMSKARTENSCHLITZ
TW200720898A	Ic coolant microchannel assembly with integrated attachment hardware
TW200629048A	Systems for improved blower fans
TWI267338B	Apparatus for cooling heat generating devices
TW200525340A	Pumped liquid cooling for computer systems using liquid metal coolant
TWI237921B	Integrated platform and fuel cell cooling
TW200526107A	Folded fin microchannel heat exchanger
TW200511637A	Integrated platform and fuel cell cooling
TW200425829A	An actuation membrane for application to a card slot of a system

EXPERT WITNESS ENGAGEMENTS

- Represented the defendant for the Case No. 3:12-cv-04498-EMC: ASETEK HOLDINGS, INC. and ASETEK A/S, Plaintiffs, v. COOLIT SYSTEMS INC., Defendant. Prepared expert reports for patent invalidity, patent infringement, rebuttal to opposing expert witness reports of invalidity and infringement reports. Provided testimony during three-day deposition (2014)
- Prepared IPR 2014-01172. Patent no. 8,749,968 related to server thermal management.
- Represented the defendant in a patent lawsuit involving mechanical aspects of a vapor chamber product used in computing products thermal management. Provided expert report on claim construction and testified during deposition (district court litigation 17-cv-05363-JSW).
- Prepared expert reports for IPRs (2019-00144, 2019-00146, 2019-000334, 2019-00337, 2019-00146) for three patents (US 7066240, 7100679, 7100680) related to the abovementioned lawsuit. Provided deposition testimonies related to these IPRs.
- Retained by Patent owner as an expert for Ex Partes Review of a blast furnace cooling stove patent (2019).
- Prepared expert report for IPRs for a patent on liquid cooling for thermal management of electronics (IPR2019-00705). Deposition on Feb 4, 2020.
- Serving as an expert witness for the matter pending before the U.S. District Court, Northern District of California between Asetek Danmark A/S versus CoolIT Systems; case number 3:19-cv-00410-EMC. Provided claim construction report and deposition testimony for the same.
- Represented the defendant for IPR 2020-00825, challenging patent no. 10,274,266. Deposition: Feb '21 via zoom.
- Represented the defendant for IPR 2020-00747, challenging patent no. 9,057,567. Deposition: Feb 21 via zoom.
- Represented the defendant Cooler Master Co., Ltd. / CMI USA Inc. in opposing a motion for contempt sanctions by Asetek Denmark A/S. (Case no. 3:13-cv-00457-JST). Provided expert declaration and deposition testimony in June 2021.
- Provided expert report regarding infringement of US Patent no. 8,746,330; 9,057,567; and 10,274,266. Also provided expert report in response to opposition invalidity report of these patents. Two depositions in Jan 2022 related to infringement and invalidity respectively.
- Representing the petitioner for IPR challenging US patent no. 10,599,196 B2 related to liquid cooling (IPR2021-01196). Provided expert report. Deposition in March 2022.
- Representing the petitioner for IPR challenging US patent no. 10,613,601 B2 related to liquid cooling (IPR2021-01195). Provided expert report. Deposition in March 2022.
- Retained as an expert witness in an immersion cooling patent dispute by plaintiff Midas Green Technologies (case no. 6:22-cv-00050-ADA). Inspected accused facilities around Texas, provided expert report on infringement and other infringing alternatives. Deposed in Feb 2024 for my report. Trial expected in June 24 (Currently on hold).

- Retained as an expert witness in an air-cooling related ITC patent infringement by plaintiff Manufacturing Resource International (MRI) - (case no: 2:22-cv-00320) against Samsung. Provided expert report on claim construction and deposed in Feb 2023 for the same. Also provided infringement reports and validity reports. Deposed in April 2023 for infringement, validity and domestic industry analysis. Also deposed in July 2023. **Testified in ITC trial in July 2023.**
- Provided expert report and deposition for IPR2023-00255. Represented patent owner MRI.
- Retained as an expert witness in a refrigeration and ice maker **ITC Case (337-TA-1369)** between Hoshizaki America vs. Blue Air FSE LLC & Bluenix Co, Ltd. Representing defendant Bluenix and have provided claim construction, patent invalidity and non-infringement reports. Deposition in March 2024. **Testified in the ITC trial in May 2024.**
- Retained as an expert witness in a liquid cooling ITC case (337-TA-1394) between CoolerMaster entities and Enermax, Apaltek etc. Representing the defendants. Provided deposition testimony in Oct 2024 for invalidity and non-infringement and provided testimony during trial Dec 2-6. 2024.
- Retained as an expert witness for a lawsuit between SuperCooler Technologies and Coca-Cola Company (Case no 6:23-cv-00187-CEM-RMN in middle district of Florida- relating to refrigeration equipment and super fast cooling of beverages) involving misappropriation of trade secrets, breach of contract and other topics. Case is stayed currently.
- Retained by a major server OEM to for three IPR filings related to thermal management and cooling of server systems (representing the petitioner). Have provided initial expert reports, awaiting institution decision. Also will be supporting a related district case in late 2025.

Exhibit B to Ex. 1003

Issued US patents (dock / stationary mode):

1. US7048038B2 – Increased thermal capability of portable electronic device in stationary or docked mode.
2. US6837057B2 – Docking station to cool a computer.
3. US6845008B2 – Docking station to cool a notebook computer.
4. US6837058B1 – Tablet air cooling dock.
5. US6801430B1 – Actuation membrane to reduce an ambient temperature of heat generating device (used as part of dock/card-slot based cooling).
6. US6674640B2 – Increased thermal capability of portable electronic device in stationary or docked mode.
7. US6646874B2 – Mobile computer system with detachable thermoelectric module for enhanced cooling capability in a docking station.
8. US6415612B1 – Method and apparatus for external cooling an electronic component of a mobile hardware product, particularly a notebook computer, at a docking station having a thermoelectric cooler.

Published US applications (dock / docking station / tablet dock):

1. US20040261421A1 – TABLET AIR COOLING DOCK.
2. US20040201959A1 – Increased thermal capability of portable electronic device in stationary or docked mode.
3. US20030002252A1 – Increased thermal capability of portable electronic device in stationary or docked mode.
4. US200200186531A1 – Mobile computer system with detachable thermoelectric module for enhanced cooling capability in a docking station.
5. US20020141152A1 – Docking station to cool a notebook computer.
6. US20040123604A1 – Docking station to cool a computer.