

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NINTENDO CO., LTD. and
NINTENDO OF AMERICA INC.,

Petitioners,

v.

GAMEVICE, INC.,

Patent Owner.

PTAB Case No. IPR2023-00643

Patent No. 10,391,393

REPLY DECLARATION OF GARRY KITCHEN

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EXHIBIT LIST

No.	Description
Ex. 1001	U.S. Patent No. 10,391,393 (“’393 patent”)
Ex. 1003	U.S. Patent Application Publication No. 2001/0045938 A1 (“Willner”)
Ex. 1004	Translation of Korean Patent No. 10-2011-0116892 (“Park”) with Korean Version and Translation Certification
Ex. 1005	U.S. Patent No. 9,539,507 B2 (“Schoenith”)
Ex. 1006	International Patent Application No. WO 2014/079264 A1 (“Kessler”)
Ex. 1007	U.S. Patent Application Publication No. US 2012/0271967 A1 (“Hirschman”)
Ex. 1008	U.S. Provisional Patent Application No. 61/477,387
Ex. 1009	File History for U.S. Patent No. 10,391,393
Ex. 1010	<i>Nintendo Co. v. Gamevice, Inc.</i> , IPR2018-01521, Paper 34 (PTAB Mar. 10, 2020)
Ex. 1011	<i>Nintendo Co. v. Gamevice, Inc.</i> , IPR2018-01522, Paper 34 (PTAB Mar. 10, 2020)
Ex. 1012	U.S. Patent No. 9,126,119 (“’119 patent”)
Ex. 1013	File History for U.S. Patent No. 9,855,498

Ex. 1014	Commission Determination, <i>Certain Portable Gaming Console Systems with Attachable Handheld Controllers and Components Thereof</i> , ITC Inv. No. 337-TA-1111, 84 Fed. Reg. 54640 (Oct. 16, 2019)
Ex. 1015	Nintendo’s First Supplemental Response to Gamevice Interrogatory Concerning Nintendo’s Invalidity Contentions, <i>Portable Gaming Console Systems with Attachable Handheld Controllers and Components Thereof II</i> , ITC Inv. No. 337-TA-1197 (June 23, 2020)
Ex. 1016	Excerpts of Gamevice’s Supplemental Objections and Responses to Nintendo of America Inc.’s First and Third Sets Interrogatories, <i>Portable Gaming Console Systems with Attachable Handheld Controllers and Components Thereof II</i> , ITC Inv. No. 337-TA-1197 (July 2, 2020)
Ex. 1017	Rule 36 Notice Affirming Commission Opinion, <i>Gamevice, Inc. v. ITC</i> , No. 20-1264 (Fed. Cir.), ECF No. 63 (May 20, 2021)
Ex. 1018	Initial Determination, <i>Certain Portable Gaming Console Systems with Attachable Handheld Controllers and Components Thereof II</i> , ITC Inv. No. 337-TA-1197 (July 2, 2021)
Ex. 1019	Commission Determination, <i>Certain Portable Gaming Console Systems with Attachable Handheld Controllers and Components Thereof II</i> , ITC Inv. No. 337-TA-1197, 86 Fed. Reg. 50744 (Sept. 3, 2021)
Ex. 1020	Gamevice Inc.’s Unopposed Motion to Dismiss, <i>Gamevice Inc. v. U.S.I.T.C.</i> , Appeal No. 22-1120 (Fed. Cir.), ECF 16 (Feb. 10, 2022)
Ex. 1021	Gamevice Inc.’s Case Management Conference Report, <i>Gamevice Inc. v. Nintendo Co., Ltd.</i> , No. 3:19-cv-1942-RS (N.D. Cal.), ECF 206 (Jan. 27, 2022)
Ex. 1022	Nintendo’s Notice of Motion and Motion for Rule 11 Sanctions, <i>Gamevice Inc. v. Nintendo Co., Ltd.</i> , No. 3:19-cv-1942-RS (N.D. Cal.), ECF 216 (Mar. 30, 2022)

Ex. 1023	Further Case Management Scheduling Order, <i>Gamevice Inc. v. Nintendo Co., Ltd.</i> , No. 3:19-cv-1942-RS (N.D. Cal.), ECF 219 (Apr. 11, 2022)
Ex. 1024	Order Denying Motion for Rule 11 Sanctions, <i>Gamevice Inc. v. Nintendo Co., Ltd.</i> , No. 3:19-cv-1942-RS (N.D. Cal.), ECF 225 (May 18, 2022)
Ex. 1025	Memorandum from Katherine K. Vidal to Members of the Patent Trial and Appeal Board on Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (June 21, 2022), <i>available at</i> https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf
Ex. 1026	Federal Judicial Center, United States District Courts, National Judicial Caseload Profile (June 30, 2022)
Ex. 1027	<i>Code200, UAB v. Bright Data Ltd.</i> , IPR2022-00861, Paper 18 (PTAB Aug. 23, 2022) (Director Decision)
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Ex. 1036	<i>Nintendo Co. v. Gamevice, Inc.</i> , IPR2018-01521, Ex. 1002
Ex. 1037	Gamevice’s Opposition to Nintendo’s Motion for Summary Judgment, <i>Gamevice, Inc. v. Nintendo Co., Ltd.</i> , No. 18-cv-1942-RS (N.D. Cal.), ECF 267 (Sept. 28, 2023)
Ex. 1038	<i>Nintendo Co. v. Gamevice, Inc.</i> , IPR2018-01522, Paper 10
Ex. 1039	<i>Nintendo Co. v. Gamevice, Inc.</i> , IPR2018-01521, Paper 9
Ex. 1040	Moga Ace Power User Manual
Ex. 1041	Deposition Transcript of Alexander Slocum
Ex. 1042	<i>Nintendo Co. v. Gamevice, Inc.</i> , IPR2018-01522, Paper 2
Ex. 1043	<i>Nintendo Co. v. Gamevice, Inc.</i> , IPR2018-01521, Paper 2

I. INTRODUCTION

1. I submitted a Declaration (Ex. 1002) (“Original Declaration”) in support of Petitioners’ Nintendo Co., Ltd.’s and Nintendo of America Inc.’s IPR Petition (Paper No. 1) (“Petition”) in this proceeding. Patent Owner Gamevice, Inc. filed a Patent Owner Response (Paper No. 18) (“Response”) and a Declaration of Professor Alexander H. Slocum (Ex. 2004) (“Prof. Slocum’s Declaration”) on January 30, 2024. I have reviewed the Response and Prof. Slocum’s Declaration. I note that, with few exceptions, the arguments in the Response and Prof. Slocum’s Declaration are nearly identical.

2. I now submit this Reply Declaration in support of Petitioners’ Nintendo Co., Ltd.’s and Nintendo of America Inc.’s Reply to address arguments raised by Gamevice in the Response and by Prof. Slocum in his declaration. As explained below, it remains my opinion that each of the challenged claims is anticipated or rendered obvious by the prior art cited in the Petition.

II. EXPERIENCE WITH HANDHELD GAMING DEVICE DESIGN

3. Prof. Slocum appears to imply that I am not a person of ordinary skill in the art (“POSITA”) based on his opinion about the level of skill required for a POSITA. Prof. Slocum’s Declaration (Ex. 2004) at ¶ 22. Prof. Slocum contends that one of skill in the art “at the time of the effective filing date of the ’393 patent would have had an undergraduate degree in mechanical engineering and two years of

industry or research experience in mechanical assemblies and hand-held consumer devices or other technology involving a physical device that allows humans to interface with electrical devices, where additional relevant experience can compensate for a lack of relevant education, and *vice versa*.” Prof. Slocum’s Declaration (Ex. 2004) at ¶ 18.

4. As explained in my Original Declaration, I disagree with Prof. Slocum’s description of a POSITA. Original Declaration (Ex. 1002) at ¶ 39. Based on the title of the ’393 patent (“Game Controller with Structural Bridge”) and the patent’s description of the technology at issue (’393 patent (Ex. 1001) at 4:10-21), the field of the alleged invention is interactive products, specifically handheld gaming devices, not “mechanical assemblies and hand-held consumer devices or other technology involving a physical device that allows humans to interface with electrical devices,” as Prof. Slocum argues. Prof. Slocum’s Declaration (Ex. 2004) at ¶ 18.

5. Prof. Slocum’s description of the relevant field ignores the focus of the patent and the fact that the claimed technology relates to “computing devices,” “electronic game control modules,” “communication links,” “electronic communications,” and “electrical communications.” ’393 patent (Ex. 1001) at claim 1. The DETAILED DESCRIPTION section of the ’393 patent states that the “disclosure generally relates to a combination game controller and information input

device directed to controlling electronic games ... also referred to herein as video games, computer and applications games,” and “an input device for controlling movement of a virtual object provided by the electronic game.” ’393 patent (Ex. 1001) at 4:12-21. The ’393 specification also mentions several technical concepts that extend beyond Prof. Slocum’s description, including data storage, communication protocols, and networking technologies to be incorporated into a handheld gaming device, such as USB and personal area network connectivity. ’393 patent (Ex. 1001) at 6:9–13, 6:19–24, 6:66–7:14, 7:27–36, 8:57–61. Given the scope of the technology at issue, I maintain the description of a POSITA in my Original Declaration, which includes that a POSITA “would possess at least one year of experience in developing and/or evaluating interactive products.” Original Declaration (Ex. 1002) at ¶ 39. That experience would have exposed a POSITA to the various technologies implicated by the ’393 patent.

6. Practical experience with interactive gaming and related products would have been particularly important for a POSITA. In this specific subfield of interactive entertainment, a user interfaces with an electronic device as part of a gaming experience. Design issues involving the methods of controlling the device are inextricably linked to what is happening on the screen that displays the game. A designer of the physical interface would not have been able to make effective decisions on how a player should interface with an interactive game and the related

gaming device without knowledge of and development experience relating to interactive gaming. It would not have been enough to have observed users playing a game. The design process requires more than “standard mechanical engineering,” as Prof. Slocum asserts. Prof. Slocum’s Declaration (Ex. 2004) at ¶ 19.

7. But even under Prof. Slocum’s definition, I qualify as a POSITA. Prof. Slocum notes that even without an undergraduate degree in mechanical engineering, a person may be a POSITA because “additional relevant experience can compensate for a lack of relevant education.” Prof. Slocum’s Declaration (Ex. 2004) at ¶ 18. I have over 40 years of experience in the design and development of interactive products, including specifically with respect to handheld gaming devices. Original Declaration (Ex. 1002) at ¶¶ 24–30. This is the same category of products claimed in the ’393 patent and described in the prior art references at issue in this proceeding. This experience qualifies me as a POSITA, even under Prof. Slocum’s definition. By contrast, Prof. Slocum has no previous experience designing or developing handheld gaming products like the ones at issue in this proceeding. Prof. Slocum’s Declaration (Ex. 2004) at ¶¶ 5–13; Deposition Transcript of Prof. Slocum (Ex. 1041) at 59:13–60:1. In fact, Prof. Slocum appears to have no formal education, training, or industry experience in the broader field of video games and/or interactive entertainment. Instead, he relies on occasions from 2004–2019 in which he observed students playing video games, although he “do[es] not recall exactly what games or

controllers they were using at the time.” Prof. Slocum’s Declaration (Ex. 2004) at ¶¶ 12, 20. Prof. Slocum has acknowledged that none of the controllers he observed were like the handheld gaming devices at issue in this proceeding, which include a controller combined with a computing device like a mobile phone. Deposition Transcript of Prof. Slocum (Ex. 1041) at 75:14–20.

8. As described in my Original Declaration, I am an engineer and video game designer with decades of industry experience. Original Declaration (Ex. 1002) at ¶¶ 5–32. My engineering background includes digital electronics, embedded systems, microprocessors, and software development. While I am often recognized in the video game industry for software titles I developed, I began my career working with digital electronics in the design, development, and engineering of early handheld gaming devices.

9. In 1976, while still in college, I joined an established industrial design firm, James Wickstead Design Associates, which was in the process of expanding the company’s services to include digital electronics expertise. The firm intended to form a vertically integrated design shop, specializing in the design, development, and engineering of consumer electronics products and bringing together world class expertise in both electrical engineering and industrial design. I was hired as an engineering trainee.

10. At the time, James Wickstead Design Associates focused primarily on the design of injection molded, high volume plastics for large corporate clients such as Gralab (photographic timers), Conair (hair dryers), and Vydeck/Exxon (word processing systems). The firm expanded to provide these same clients with skilled and reliable electronics design capabilities.

11. As the company grew, I accepted additional responsibilities commensurate with my on-the-job experience and education. For example, I became involved in the entire product development process from ideation to production engineering. As I developed my skills in electrical engineering, I learned about related areas of product development, including industrial design, mechanical engineering, injection molding, and model development. My early work at the company included design engineering on a variety of industrial and consumer products, including digital clocks, photographic and industrial timers, and consumer aftermarket automotive accessories (such as a digital tachometer, miles-per-gallon computer, and digital clock/trip timer).

12. By the late 1970s, I was functioning as a full-time engineer using the skills I had learned on the job, while continuing to pursue my undergraduate degree at night. In the back half of the 1970s, improvements in digital electronics and semiconductor technologies led to a host of new products, such as handheld calculators, digital clocks, electronic games (Mattel Football handheld electronic

game, Atari 2600), and personal computers (Apple II). The idea of creating entertainment applications with my digital electronics skills sparked my interest, leading me to investigate further the emerging field of electronic gaming devices, including video games. I went on to design and engineer several interactive gaming units having both mechanical assemblies and electronic interfaces. I provide an overview of several exemplary products below.

13. The first electronic handheld gaming product I worked on (including contributions to hardware, software, and game design) was Wildfire Pinball, an award-winning handheld gaming device that simulated the game of pinball. An advertisement for Wildfire Pinball that was run nationally appears below.



14. I was a lead engineer on the project and therefore an integral part of the team that brought the product to market. Wildfire was named one of the Top 100 Games of 1979 by Games Magazine. From a user interface standpoint, as shown in the figure below, Wildfire Pinball is similar to the handheld gaming devices at issue in this proceeding. The handheld device is supported by a player with two hands and played with the thumbs. The gameplay itself takes place on a display that is located between the player's hands.

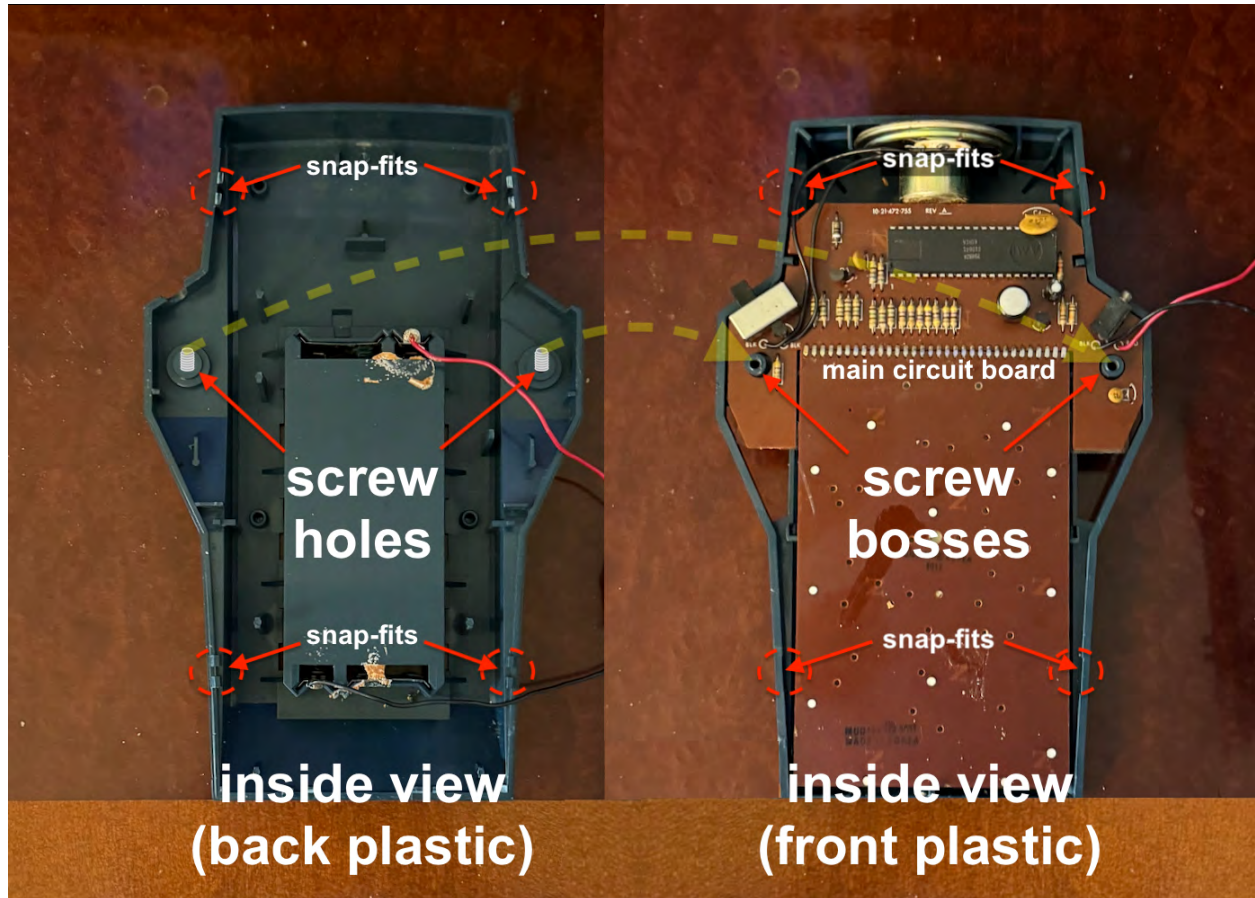


15. As a key member of the Wildfire engineering team, I am familiar with the specifics of how the product was manufactured and assembled. The Wildfire unit is comprised of several individual plastic parts. The front portion of the plastic casing is shown in the annotated image below on the left and features three user-controlled buttons – two flipper buttons located on either side of the display and the shooter button located at the bottom right of the display. The back portion of the unit is

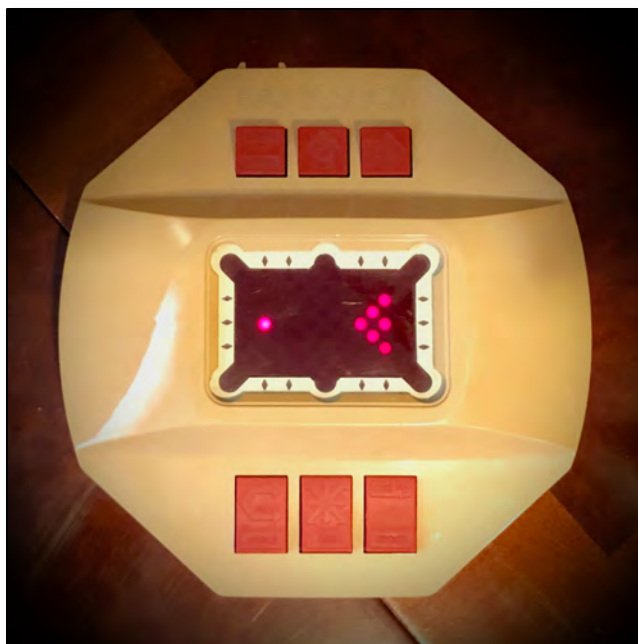
shown in the annotated image below on the right and features the battery compartment and two counterbore screw holes that receive two screws as the primary method of securing the front and back shells together.



16. The two screws enter through the two holes in the bottom of the case, and screw into two screw bosses found on the inside of the front of the case, as shown in the annotated image below. Several cantilever snap-fit connectors are also built into the design of the thin plastic casing to further secure the mating of the two case shells.



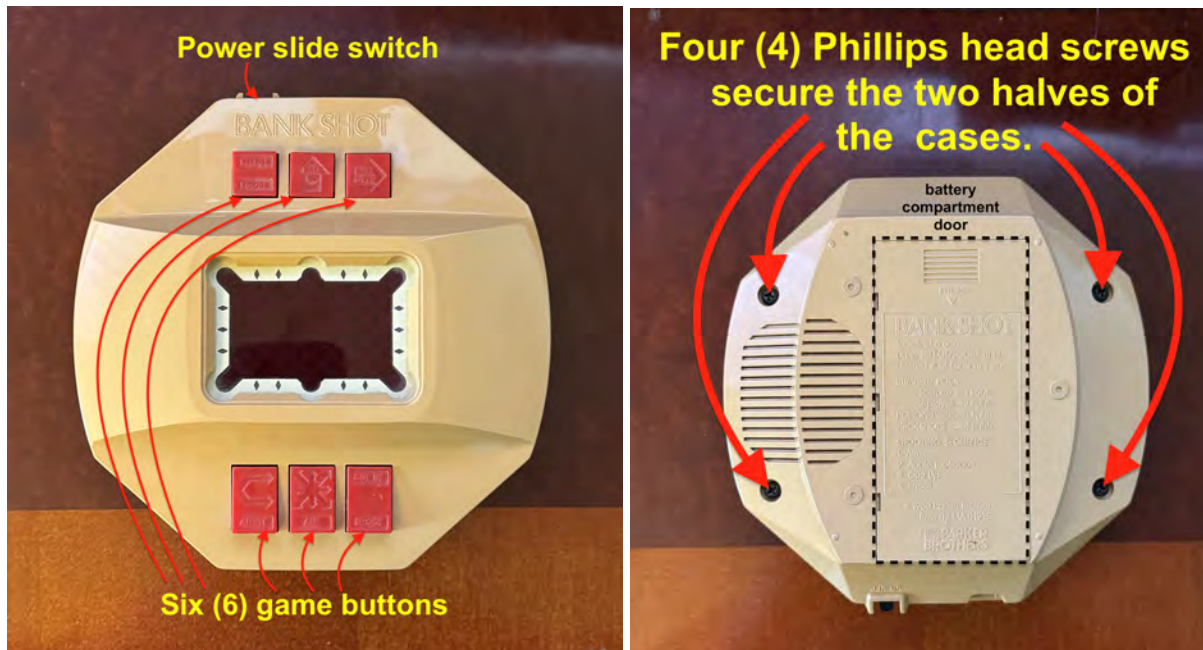
17. Following my work on Wildfire Pinball, I developed, patented, and engineered Bank Shot Electronic Pool, an award-winning handheld gaming device that simulated the game of billiards. The handheld gaming device is shown in the image below.



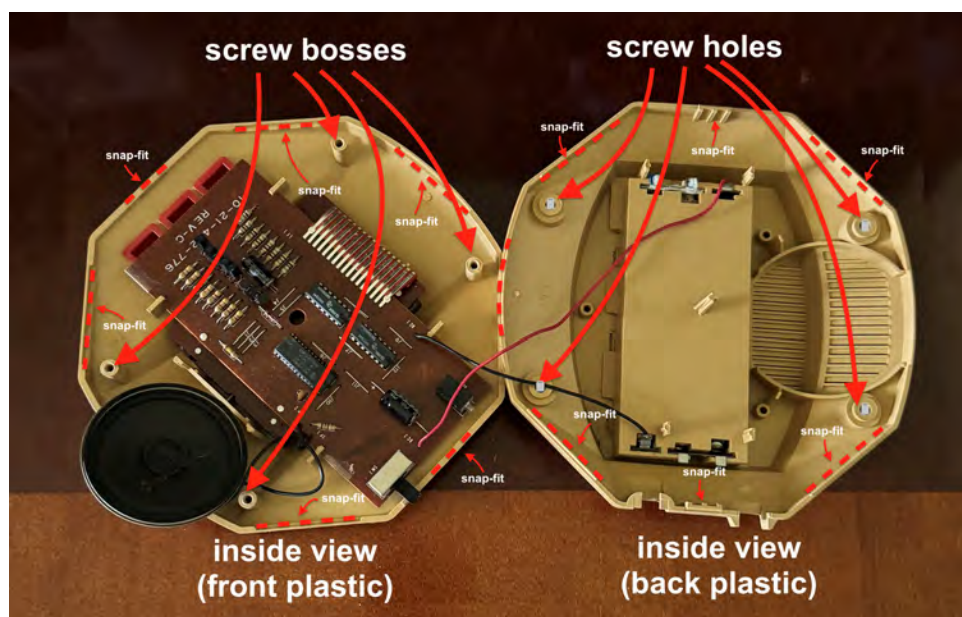
18. As the primary developer, I conceived, designed, and built prototypes of the earliest versions of Bank Shot, from inception to proof of concept. In that capacity, as the sole driver of the research and development phase of that initial development process, I defined what controls would be necessary (i.e., buttons/switches/joysticks/etc.), what their functions should be, how many of them would be required, and, from a human engineering standpoint, where each one should be physically located on the form factor of the gaming device to maximize the usability of the product. This process included a combination of game design, industrial design, and software engineering, as each control input type had to be chosen (e.g., button vs. joystick vs. touch pad) and implemented in hardware and software based on its desired function as driven by the gameplay needs of the product.

19. I was one of the lead engineers on the production engineering team, working closely with the designers at Parker Bros. to bring the best product possible to market. As the product's developer, and a key member of the Bank Shot engineering team, I have strong familiarity with the specifics of the product's industrial design and various input devices.

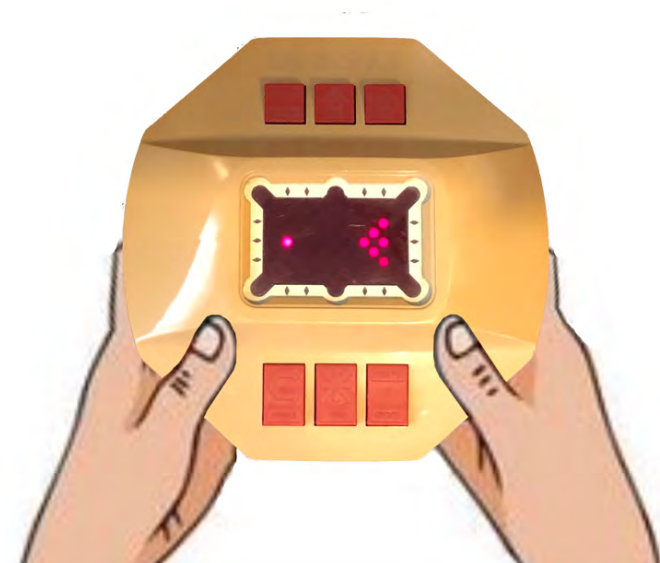
20. The front portion of Bank Shot's plastic casing is shown in the annotated image below on the left and features six user-controlled game buttons – the three below the display are ANGLE, AIM, and CUE UP/MODE, while the three above the display are SELECT/SCORE, BALL UP, and BALL OVER. The unit also has an on/off slide switch in the upper right corner. The back portion of the unit is shown in the annotated image below on the right and features the battery compartment and four counterbore screw holes that receive four screws as the primary method of securing the front and back shells together.



21. The four screws enter through the four holes in the bottom of the case, and screw into screw bosses found on the inside of the front of the case, as shown in the annotated image below. Several cantilever snap-fit connectors are also built into the design of the thin plastic casing to further secure the mating of the two case shells.



22. Bank Shot was named one of the Ten Best Games of the Year (1980) by OMNI Magazine. As shown in the figure below, Bank Shot is similar to the handheld video game devices at issue in this proceeding. The handheld device is supported by a player with two hands and played with the thumbs. The gameplay itself takes place on a display that is located between the player's hands.



23. In 1980, I developed a prototype for a space-themed handheld gaming device that ultimately never went to market. The annotated images below show the working gaming device prototype that I personally designed, built, and programmed. The circuit board houses an AMI microprocessor (CPU) along with appropriate support circuitry and a 2-kilobyte read only memory (ROM) that holds the game program. A ribbon cable carries I/O lines which drive the display in the external handheld game unit, which consists of LEDs relating to game scoring and on-screen

game elements. The ribbon cable also returns player inputs from the three switches: fire, move left, and move right buttons.



24. As the developer of the space-themed handheld gaming device prototype, I conceived, designed, and prepared a working prototype of the gaming device. I was the only engineer on the hardware, software, user interface, and game design aspects of the project. The space-themed handheld gaming device is similar to the handheld video game devices at issue in this proceeding. The handheld device is supported by a player with two hands and played with the thumbs. The gameplay itself takes place on a display that is located between the player's hands.

25. By 1980, with the introduction of the Atari 2600 (the first successful cartridge-based game console), the video game market was becoming the dominant segment of electronic gaming, and my focus shifted accordingly. I designed, developed, and released my first commercial video game in 1982 (Space Jockey).

26. Since my electronic gaming work in the mid-1970s, I have developed interactive electronic games that have been played by millions of gamers on game consoles, PCs, handheld gaming devices, first generation phones (J2ME, BREW), smartphones, tablets, online websites, and tradeshow kiosks. All of these games have involved similar design challenges as the handheld gaming devices at issue in this proceeding. When playing the games I developed, a player uses their sensory faculties to operate a physical-to-electronic game interface device (a button, analog or digital joystick, touchpad, exercise pad, steering wheel, driving pedal, trackball, touchscreen, motion sensing wand, pointing device, gyroscopic sensor, accelerometer sensor, proximity sensor, VR/AR input system, potentiometer (paddle), simulated musical instrument, simulated sports equipment, etc.) with the goal of manipulating objects on a game screen of some sort. Playing the game requires focusing intently on the display screen while observing and reacting to how the player's inputs affected the action/outcome of the game (i.e., as displayed as objects in the game). In all cases, if the player's goal is to perform well in the game, it is important to minimize movement of the screen during gameplay so a user is able to reliably see the objects on the display. For example, a player avoids extreme or sudden movements while playing a game to the extent that those movements would interfere with the player's focus on the display screen.

27. Prof. Slocum claims that a POSITA “would not need specific prior experience with video game controllers” as the claims “do not directly address the software aspects of video games” and represent only “standard mechanical engineering design.” Prof. Slocum’s Declaration (Ex. 2004) at ¶ 19. Therefore, Prof. Slocum’s only requires that a POSITA would have an “understanding of the manner in which normal users generally operate game controllers.” Prof. Slocum’s Declaration (Ex. 2004) at ¶ 20. Based on my decades of experience in the video game field, I disagree with Prof. Slocum’s assertions.

28. The video game experience is based on a player physically interacting with the game controls combined with the way in which the software reads player input (in the form of data sent from the controls), how the software computes the results of player input, and how the software responds to the player input. A POSITA would have understood this inextricable connection between the physical controls and game software to deliver the interactive experience and determine what happens in the game on the display screen. In considering handheld gaming devices such as those at issue in this proceeding, it would have been important to understand that both physical controls and software affect results in a video game displayed on a screen.

29. It is apparent from Prof. Slocum’s assertions as to how users would have operated the handheld gaming devices such as those at issue in this proceeding that he did not consider these factors in evaluating the prior art.

III. ANALYSIS OF PROF. SLOCUM’S OPINIONS REGARDING CITED PRIOR ART AND OBVIOUSNESS COMBINATIONS

A. Prof. Slocum Relies on an Inaccurate Understanding of the “Normal” Operation of the Prior Art Combinations

1. Prof. Slocum Bases His Opinion of “Normal” Operation on Limited Observations of Others Playing Video Games

30. Prof. Slocum frequently offers opinions that are based on the “normal” operation of the device described in Park and the combined devices of Willner and Park, Schoenith and Park, and Schoenith and Kessler described in my Original Declaration. Prof. Slocum’s Declaration (Ex. 2004) at ¶¶ 57, 66–67, 72–75, 85, 91–101, 103–105, 121–133. Prof. Slocum bases his understanding of the “normal” operation on his “significant experience observing gamers in action.” Prof. Slocum’s Declaration (Ex. 2004) at ¶ 20. In his first example of observing gamers in action, Prof. Slocum refers to experiences 10–20 years ago (between Sept. 2004 to June 2012) at MIT’s Experimental Study Group where he “made spaghetti dinners (usually Wednesday evenings) and while cooking and then later hanging out with the students ... observe[d] how physical students would be with the controllers.” Prof. Slocum’s Declaration (Ex. 2004) at ¶ 12. Prof. Slocum describes a second example of gamer observation when his “wife ran a FIRST robotics team from 2005

to 2019 which was based in our house.” Prof. Slocum’s Declaration (Ex. 2004) at ¶ 20. According to Prof. Slocum, the “kitchen/dining/living area is where the high school students would hang out to relax, and this often included gaming.” Prof. Slocum’s Declaration (Ex. 2004) at ¶ 20.

31. Prof. Slocum does “not recall exactly what games or controllers” the students “were using at the time,” but he “observed how physical they would be with the controllers.” Prof. Slocum’s Declaration (Ex. 2004) at ¶¶ 12, 20. He states that it was as if high school students “were wrestling with the controls to make the game do what they wanted.” Prof. Slocum’s Declaration (Ex. 2004) at ¶ 20. Based on these observations, Prof. Slocum concludes that a POSITA “would ... have this understanding of the manner in which normal users operate controllers.” Prof. Slocum’s Declaration (Ex. 2004) at ¶ 20. That opinion extends to the device described in Park and the handheld gaming devices that result from the combinations of Willner and Park, Schoenith and Park, and Schoenith and Kessler.

32. Based on my decades of experience playing, designing, and developing video games across dozens of different video game platforms, all while coordinating the development of hundreds of video games and observing Q&A and market research play sessions for many of those games, Prof. Slocum’s opinion on the “normal” use of the device described in Park and the combined handheld gaming

devices of Willner and Park, Schoenith and Park, and Schoenith and Kessler is incorrect.

2. Prof. Slocum Fails to Take Several Factors, Including Prior Art Disclosures, Into Account in Defining “Normal” Operation

33. Prof. Slocum did not undertake any analysis of the “normal” use of a game controller based on objective evidence and does not have the experience of a video game player, much less a professional in the interactive gaming field. This lack of personal experience in the interactive gaming arts led to a generalization that “normal” use is what Prof. Slocum casually observed from groups of students playing unidentified video games on unidentified game platforms in a social environment.

34. In defining “normal” operation, Prof. Slocum fails to consider practical considerations regarding how a user would have interacted with the handheld gaming devices at issue in this proceeding. A user would not have engaged in the style of physical play possible with a satellite game controller (i.e., one that is separate from the gaming device and display). A game console with a game controller which can be moved independently from the console/display combination allows players to hold the controller in any orientation and position without affecting the player’s focus on the screen. This freedom of movement allows a physically active player to manhandle the controller as Prof. Slocum describes. For example,

one can still play a game that requires intense focus while holding the controller over their head with both hands raised. That is not true with the handheld gaming devices at issue in this proceeding because the player needs to keep their eyes focused on the action on the display, which one cannot do if the display is being waved around, twisted, or held over the player's head. This is simply because, with the handheld gaming devices in question, the game controllers are attached to the sides of the display, and moving the controllers in handheld gaming devices also physically moves the screen. When playing, users are intently focused on the game screen; moving the controller around or "wrestling" with it, as Prof. Slocum suggests, would have seriously detracted from the player's performance.

35. In addition, the handheld gaming devices that are the subject of this proceeding hold a mobile phone, tablet, or computer, each of which would likely have cost ten times the price of a console game controller. While physical play with a \$50 XBOX controller at the end of a cord may have been acceptable, a user would have not engaged in such risky behavior with a device that holds a \$600 smartphone.

36. Taking these issues into account and based on my experience in the interactive gaming industry, in my opinion during "normal" usage of a handheld gaming device, such as the ones at issue in this proceeding, a user would have held

the unit with both hands, one on each side, with thumbs at the ready to operate the controller inputs, as shown below.¹



37. My understanding is supported by the prior art. For example, Park taught that its gaming controller device “sufficiently allow[ed] for a mobile phone (1) to be mounted on the device ... and used.” Park (Ex. 1004) at ¶ 41. A POSITA would have understood Park to teach that under normal use, a mobile phone would have been held by the device. Park noted, however, that “severe” use cases outside the norm may have caused the mobile phone to “come loose.” Park (Ex. 1004) at ¶ 41. Park’s teachings apply equally to the combined handheld gaming devices because, like Park, Willner and Schoenith disclosed specific structures (sidewalls)

¹ <https://www.imore.com/gaming/gamevice-flex-review>.

that would have retained a computing device during normal use. Opening Declaration (Ex. 1002) at ¶¶ 146, 239–240, 325–326.

38. Another example illustrates why Prof. Slocum’s understanding of “normal” operation of a handheld gaming device is mistaken. Willner describes adapter 210, shown in Willner’s Figure 4 below. Prof. Slocum recognizes that the structural elements of “the adaptor 210 ... receive[]” “a palm/tablet sized computing device 10.” Willner (Ex. 1003) at ¶ 50. Adapter 210 also includes “connectors 214’ and 216’ [that] receiv[e] the keystroke signals from each hand grippable unit and transfer[] such to a docking connector within the adaptor 210 which mates with a corresponding connector of the computer device 10.” Willner (Ex. 1003) at ¶ 51.

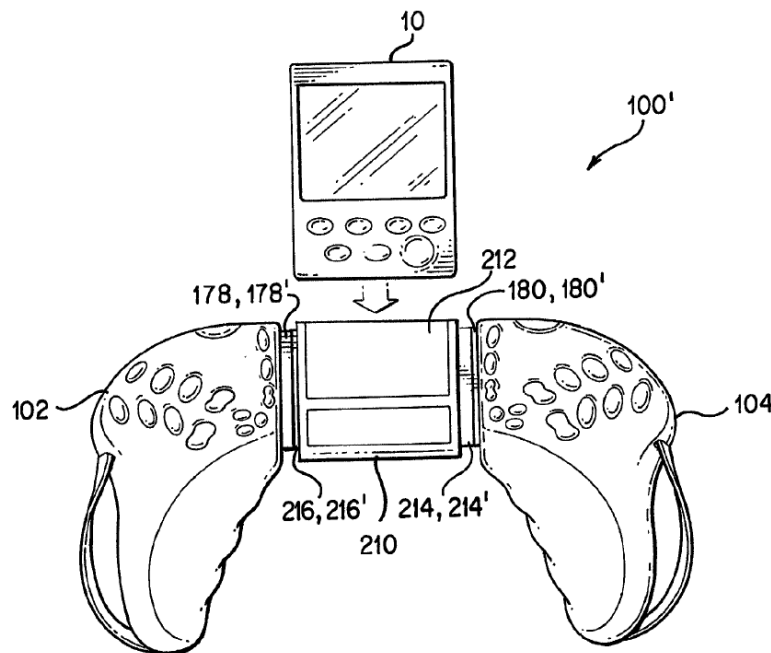


FIG. 4

39. Even though adaptor 210 has three sidewalls to support computing device 10, “lips” on the front of the sidewalls to restrain the device, and a docking connector that connects directly to the computing device 10, Prof. Slocum concludes that “computing device 10 can come loose from adaptor 210 during normal user operation.” Prof. Slocum’s Declaration (Ex. 2004) at ¶ 50. Prof. Slocum’s insistence that computing device 210 would have “come loose” despite the physical structures provided in Willner to prevent that occurrence demonstrates that his understanding of “normal” operations is unreasonable and inconsistent with the understanding of a POSITA. It is unclear whether there is any gaming controller design that would have prevented a computing device from “coming loose” under Prof. Slocum’s understanding of “normal” operation of a gaming controller.

B. Prof. Slocum Misdescribes the Proposed Combination of Willner and Park

40. Prof. Slocum argues that the combination of Willner and Park described in my Opening Declaration lacks device connector structures disclosed in Willner and Park that would have assisted in retaining a computing device held in the handheld gaming device. Prof. Slocum states that the combination “does not even include a structure like Park’s connecting terminal (21) that may assist in mechanical retention of a specific computing device 10 (Mr. Kitchen discarded the bottom of Willner’s adaptor 210 that would have included computing device docking connector 226).” Slocum’s Declaration (Ex. 2004) at ¶ 70.

41. That is not an accurate statement about the combination of Willner and Park described in my Opening Declaration. I provided an explanation of how a POSITA would have combined the references to retain a device connector, such as connector 226 disclosed in Willner: “As to device connector 226, in retaining the side walls of the adaptor in the combination of Willner and Park, **one or both side walls would include such a device connector (e.g., on the interior face of the side wall) to allow wired communication between the connectors 214’ and 216’ (in the side walls) and the computing device 10.** Willner (Ex. 1005) at ¶ 51, Fig. 8.” Opening Declaration (Ex. 1002) at ¶ 171 (emphasis added). I explained that the combined device of Willner and Park would have had sidewalls that include connectors: “The side walls ... **provide connectors** to join the housings and computing device.” Opening Declaration (Ex. 1002) at ¶ 154 (emphasis added).

42. As Prof. Slocum recognizes, connectors between the sidewalls in the combined handheld gaming device of Willner and Park and the computing device held by the handheld gaming device would have “assist[ed] in mechanical retention” of the computing device. Prof. Slocum’s Declaration (Ex. 2004) at ¶ 70. Inserting the connectors into the computing device would have stabilized the device and kept it in position between the left and right sidewalls.

C. A POSITA Would Have Combined Willner and Park, Schoenith and Park, and Schoenith and Kessler

43. Prof. Slocum argues that there are several reasons why a POSITA would not have combined Willner and Park, Schoenith and Park, and Schoenith and Kessler as described in my Opening Declaration. Prof. Slocum's Declaration (Ex. 2004) at ¶¶ 60–75, 91–105, 121–133. I disagree with Prof. Slocum, as explained below.

1. The Prior Art Combinations Would Have Secured a Computing Device

44. For each of the three combinations addressed in my Opening Declaration, Prof. Slocum asserts that the computing device held in the combined handheld gaming device would “com[e] out” during “normal” operation. Prof. Slocum's Declaration (Ex. 2004) at ¶¶ 65–66, 96–97, 126–127. As to combinations that include Schoenith, Prof. Slocum states that a computing device would have tipped backwards and out of the combined handheld gaming device. Prof. Slocum's Declaration (Ex. 2004) at ¶¶ 98, 128.

45. In my opinion, the “normal” operation of a combined handheld gaming devices based on Willner and Park, Schoenith and Park, and Schoenith and Kessler would not have caused the issues with a computing device “coming out” of the handheld gaming device, as Prof. Slocum suggests. As described above in ¶¶ 30–39, Prof. Slocum's understanding of “normal” operation of the combined handheld

gaming devices is incorrect. A skilled person would have understood that when using one of the combined handheld gaming devices under ordinary use conditions, the handheld gaming device would have retained the computing device during gameplay.

46. Furthermore, Prof. Slocum often fails to provide any evidence to support his opinions. His assertion that combinations based on Schoenith would have resulted in computing devices that tilted or tipped is based solely on diagrams that he created. Prof. Slocum's Declaration (Ex. 2004) at ¶¶ 97–98, 127–128. He does not present any technical evidence from sources other than himself to support his conclusions. This is also true for Prof. Slocum's statement that "the arrangement in the '393 Patent would offer ~7X greater resistance to tipping than Mr. Kitchen's proposed combination." Slocum's Declaration (Ex. 2004) at ¶¶ 100, 130. Prof. Slocum does not provide any calculations to support his estimate.

47. Prof. Slocum cites the Park reference, arguing that it demonstrates that a computing device held by the combined handheld gaming devices would have "come loose during gaming." Prof. Slocum's Declaration (Ex. 2004) at ¶¶ 57, 68, 99, 129. Prof. Slocum's opinion is inconsistent with Park's teachings. Park disclosed that the adjustable bridge in its primary embodiment "**sufficiently allows for a mobile phone (1) to be mounted** on the device according to the present invention **and used**" Park (Ex. 1004) at ¶ 41 (emphasis added). A POSITA would have

understood this disclosure to mean that a computing device (mobile phone) would have been secured by the device for normal use, as described above at ¶ 37. In addition, the phrase “to be mounted ... and used” does not refer to using the mobile phone as a phone. Instead, “and used” refers to the mobile phone’s intended usage “according to the present invention” as part of a handheld gaming device.

48. Park then draws a contrast between such normal use and extreme or abnormal use, explaining that “the mobile phone (1) may come loose during gaming or become detached **in severe cases.**” Park (Ex. 1004) at ¶ 41 (emphasis added). In other words, while a mobile phone is sufficiently secured by Park’s device to allow normal use, the phone may become insecure or even dislodged in some extreme scenarios. A POSITA would have understood this disclosure as a warning to use the primary embodiment of Park’s device only under normal usage conditions.

49. In addition, a POSITA pursuing the combinations of Willner and Park, Schoenith and Park, and Schoenith and Kessler would have combined the references in a way that implemented known solutions to avoid known problems. That reflects the realities of product design and marketing. The engineering process aims to meet design goals and achieve a marketable product. It involves hundreds of small and large design choices based on a myriad of variables, including the target consumer for the product, the desired price point for the product, the desired features of the product, the markets in which the product will be sold, and many other

considerations. Throughout the course of the process, a POSITA would have identified potential obstacles to a successful, marketable product and made design choices when combining teachings in the prior art to overcome those obstacles. This approach to the process maximizes the likelihood that the resulting product would have met with commercial success.

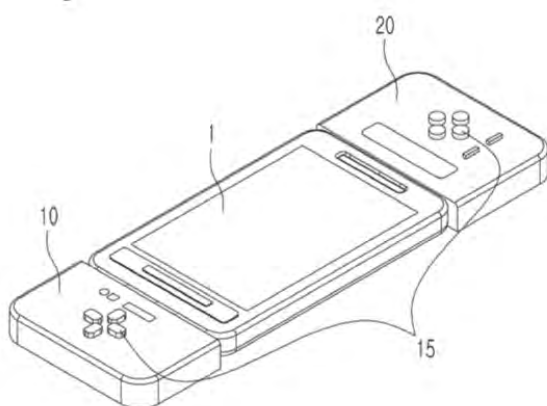
50. Specifically, when a POSITA incorporated the adjustable bridge from Park or Kessler into the handheld gaming device of Willner or Schoenith, the POSITA would have implemented one or more of the prior-art mechanical mechanisms described below to further secure a computing device held in the overall device and ensure the computing device would be retained during normal operation. Each of the mechanisms described below was known in the prior art to make a computing device more secure in a handheld gaming device. A POSITA would have applied the simple mechanical techniques because they were known in the prior art to improve computing device stability and would have required conventional adjustments to well-known structures, if needed.

51. As noted in my Opening Declaration, the figures I provided for prior art combinations show potential combinations of the prior art references. Opening Declaration (Ex. 1002) at ¶¶ 167, 173, 186, 199, 240, 249, 253, 256, 276, 326, 332, 335, 339, 342, 348, 360, 368. The figures I prepared were intended as examples given that a POSITA would have been flexible when combining the references.

Willner, Schoenith, Park, and Kessler all taught that a POSITA would have foreseen and made modifications to the designs described in those references. Willner (Ex. 1003) at ¶ 53 (“Although this invention has been described in connection with specific forms and embodiments thereof, it will be appreciated that various modifications other than those discussed above may be resorted to without departing from the spirit or scope of the invention.”); Schoenith (Ex. 1005) at 12:16-19 (“Many embodiments as well as many applications besides the examples provided will be apparent to those of skill in the art upon reading the above description.”); Park (Ex. 1004) at ¶ 64 (“The idea of the present invention is not limited to the specification and drawings, and various modifications and alternations are possible insofar as they do not depart from the technical idea of the present invention”); Kessler (Ex. 1006) at 108 (“Modifications and variations of the invention as herein set forth can be made without departing from the spirit and scope thereof”). Prof. Slocum errs in assuming that the exemplary figures I prepared are the only potential ways a POSITA would have combined the teachings of the prior art. Prof. Slocum’s Declaration (Ex. 2004) at ¶¶ 63, 83, 93–94, 97, 116, 123–124, 127, 144.

52. For example, Prof. Slocum’s opinions are based on the exemplary palm and tablet devices that appear in figures I created to show potential combinations of Willner and Park, Schoenith and Park, and Schoenith and Kessler. Prof. Slocum’s Declaration (Ex. 2004) at ¶¶ 68, 99, 117. But Prof. Slocum does not address the

suitability of the combinations as to computing devices, such as the mobile phones in landscape orientation shown in Figure 3 of Park and Figure 11 of Kessler below, that have a height similar to the height of the adjustable bridges in Park and Kessler. As taught in Park and Kessler, those computing devices would have been sufficiently supported by the bridges disclosed in Park and Kessler. Park (Ex. 1004) at ¶ 41; Kessler (Ex. 1006) at ¶ 7.



Park Figure 3

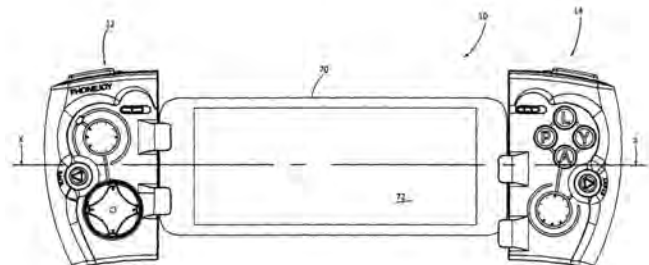


Figure 11

Kessler Figure 11

53. Prof. Slocum recognizes that '393 patent describes a device cradle that include “lips” that “prevent[] computing device 302 that is held between the confinement structures 316 from coming out in the direction of the user.” Prof. Slocum’s Declaration (Ex. 2004) at ¶ 15. The “lips” are shown at the top of the yellow structures that appear is Prof. Slocum’s annotated version of Figure 18 from the patent, which I have reproduced below. Prof. Slocum’s Declaration (Ex. 2004) at ¶ 15.

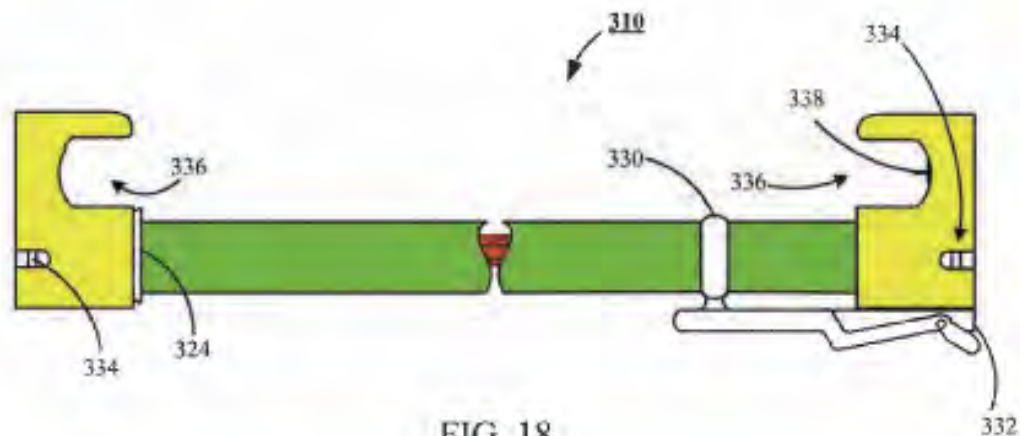
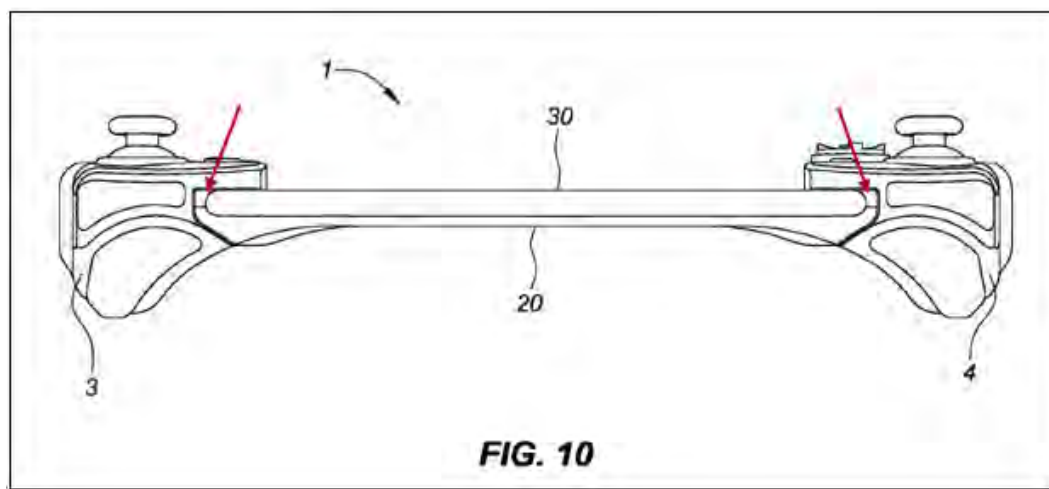


FIG. 18

54. The basic “lip” structure was well known in the prior art as a simple way to retain a computing device held by a handheld gaming device. Willner, Schoenith, and Kessler each taught “lip” structures that accomplished that purpose. Based on the teachings of the prior art, a POSITA would have included “lips” on the sidewalls of Willner and Schoenith when combining those references with Park or Kessler.

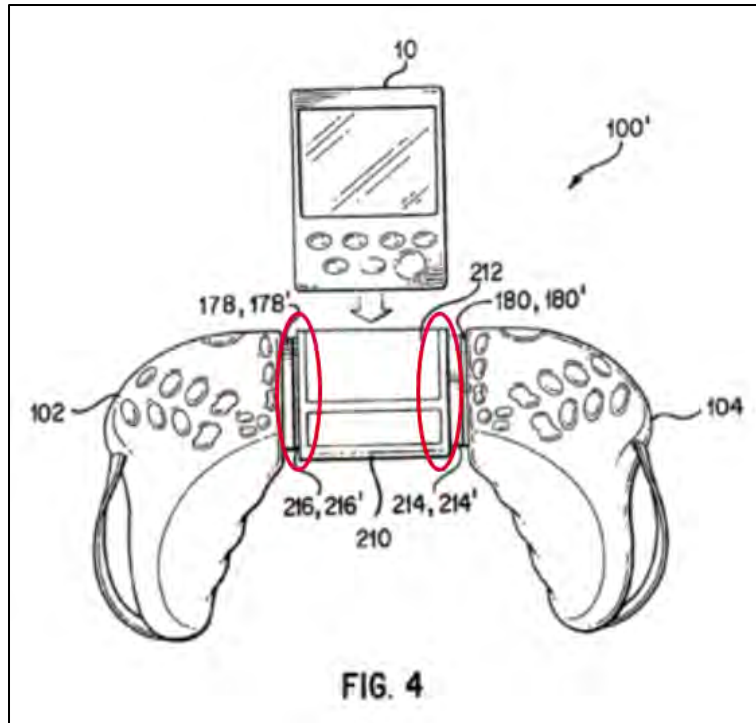
55. Schoenith taught a cradle structure with “raised walls” that include “lips” to restrain the front of a computing device—the side facing the game controls. Annotated Schoenith Figure 10 below shows the “lips” using red arrows. In combining Schoenith with Park or Kessler, a POSITA would have included the “lips” as part of the “raised walls” taught in Schoenith. A POSITA would have included the “lips” not only because Schoenith explicitly described that approach, but also because Schoenith taught using “raised walls” that “have any size, shape, configuration, or a combination thereof so that the cradle can accommodate a smart

device securely.” Schoenith (Ex. 1005) at 6:33-43. The “raised walls” with “lips” achieve that design objective. Prof. Slocum states that in combinations based on Schoenith I proposed “discard[ing]” all cradle structures other than the “sidewalls.” Prof. Slocum’s Declaration (Ex. 2004) at ¶¶ 92, 122. But my Opening Declaration does not say that the “lips” would not have been included on the “raised walls.” The figures in my Opening Declaration merely show potential combinations based on Schoenith and do not foreclose including the “lips” on the “raised walls.” As shown below, Schoenith’s disclosed “lips” are part of the cradle used in the combination, and a POSITA would not have discarded them.

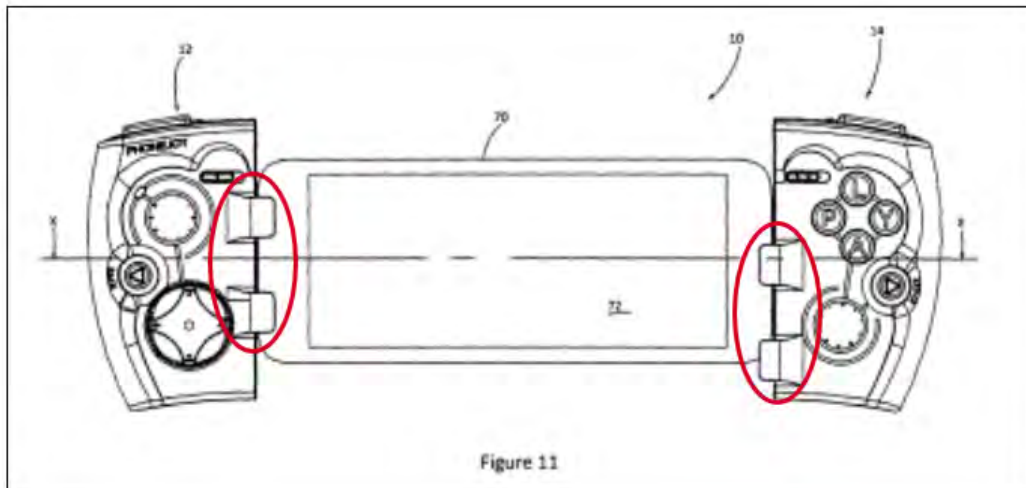


56. Willner disclosed adaptor 210 that received a computing device, such as a tablet. Willner (Ex. 1003) at ¶ 50. As shown in annotated Figure 4 below, adaptor 210 includes sidewall on the left and right sides that have “lips” circled in red. These “lips” restrain the computing device from coming out of adaptor 210 toward a user of Willner’s device. Prof. Slocum acknowledges that Willner’s adaptor

210 includes “lips.” Prof. Slocum’s Declaration (Ex. 2004) at ¶¶ 42, 49, 62, 66. As described in Schoenith, it was known in the prior art that sidewalls may “have any size, shape, configuration, or a combination thereof” to “accommodate a smart device securely.” Schoenith (Ex. 1005) at 6:33–43. In combining Willner with Park, a POSITA would have retained the “lips” on the sidewalls of Willner’s adaptor 210 to further improve the stability of the computing device in the combined handheld gaming device of Willner and Park. It was well known that such “lips” helped secure a computing device. Prof. Slocum states that in the combination of Willner and Park, I proposed “discard[ing]” the “retaining lips” on Willner’s sidewalls. Prof. Slocum’s Declaration (Ex. 2004) at ¶¶ 42, 62. My Opening Declaration does not say that Willner’s sidewalls would not have included the “lips.” The figures in my Opening Declaration merely show potential combinations based on Willner and Park. They do not foreclose including the “lips” on the sidewalls, as Willner taught.



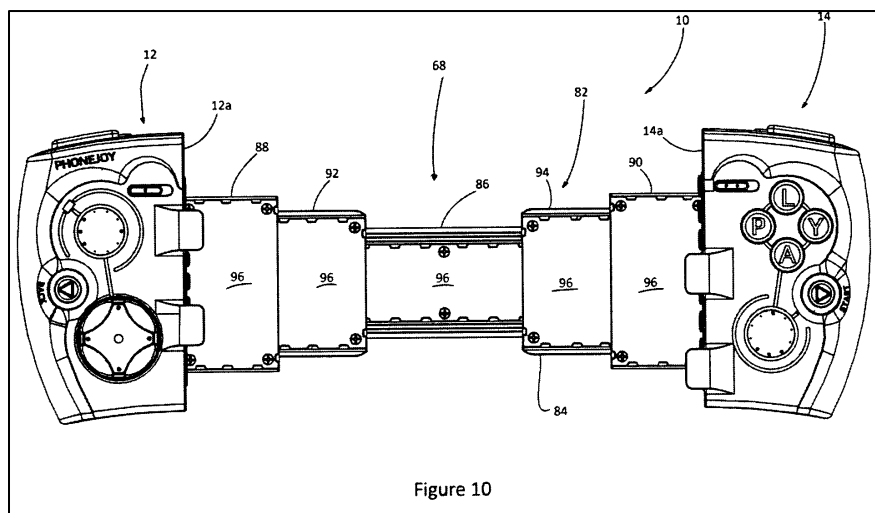
57. Kessler also taught using “lip” structures to stabilize and secure a computing device such as a mobile phone used with a handheld gaming device. Annotated Figure 11 from Kessler below shows “lip” structures circled in red. The “lips” cover a portion of the front side of the mobile phone, which keeps the device in place between the two gaming controllers. Kessler described that controller apparatus 10, which includes the “lip” features, “is well balanced and stable.” Kessler (Ex. 1006) at ¶ 76. Because it was known that sidewall “lips” as described in Schoenith and Willner would have made a computing device more secure and stable, as taught in Kessler, a POSITA would have retained the “lips” on the sidewalls when combining Willner or Schoenith with Park or Kessler.

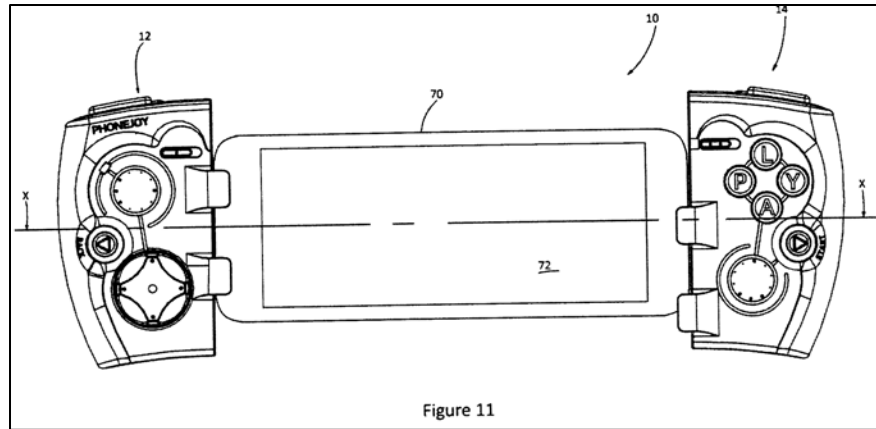


58. When combining Willner or Schoenith with Park or Kessler, a POSITA would have considered other known features that would have avoided the problem of a computing device potentially coming out of the combined handheld gaming device. One simple solution that would have stabilized a computing device and prevented the alleged tilting or tipping that Prof. Slocum mentions regarding combinations based on Schoenith (Prof. Slocum's Declaration (Ex. 2004) at ¶¶ 97–98, 100, 127–128, 130) would have been to widen the adjustable bridges taught by Park or Kessler when incorporating them into Willner's or Schoenith's handheld gaming device. Widening the bridge would have supported and stabilized a greater proportion of the underside of a larger computing device such as a tablet so that the device would not have tilted or tipped.

59. As an example, Kessler taught a bridge structure that, as shown in Figures 10 and 11 below, has the same height as a computing device (a mobile phone) in landscape orientation at the bridge's tallest point adjacent to each of the

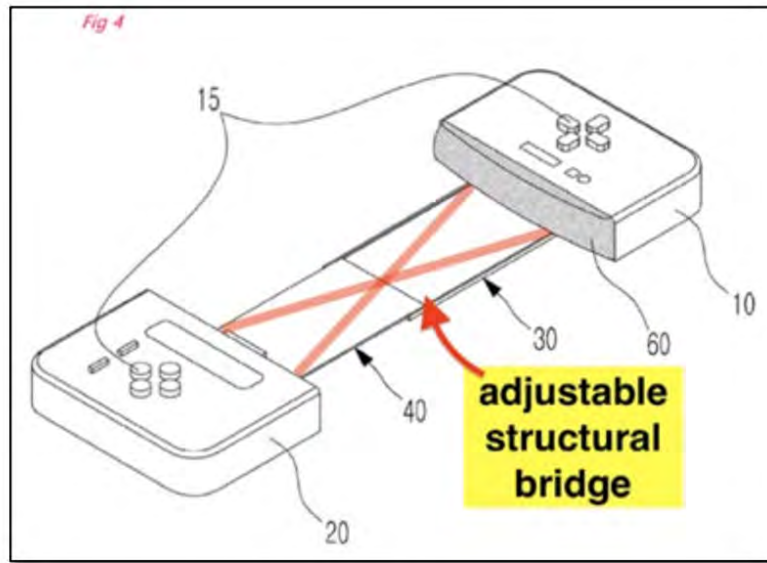
gaming controllers. Because a portion of the bridge is the same height as the mobile phone, the mobile phone is prevented from tipping or tilting. Kessler further taught that “[f]or handheld information processing devices such as some tablet computers which are generally larger than smart phones or the like, it will be understood that the apparatus of the present invention can be scaled up to accommodate a range of sizes of such tablet computers.” Kessler (Ex. 1006) at ¶ 18. A POSITA would have understood that incorporating Park’s or Kessler’s bridge into Willer’s or Schoenith’s handheld gaming device would have required making design decisions relating to the bridge, including its height and width when fully extended. Given Kessler’s teachings regarding adjustments to handheld gaming device size to accommodate larger devices, a POSITA would have increased the height of Park’s or Kessler’s bridge when incorporating it into Willer’s or Schoenith’s handheld gaming device so that larger computing devices such as tablets would have been stabilized and supported.





60. Park also disclosed design enhancements that a POSITA would have implemented to increase stability for a mobile device held in the combined handheld gaming device based on Willner and Schoenith. Park taught increasing device stability by using (i) “a cushioning pad” or (ii) a “connecting assembly.” Park (Ex. 1004) at ¶¶ 42-43, Figs. 4, 5.

61. The cushioning pad is “made of a material such as silicone or urethane which is not too soft but also has sufficient elasticity.” Park (Ex. 1004) at ¶ 46. Park’s annotated Figure 4 below, which appears in my Opening Declaration, shows cushioning pad 60. Opening Declaration (Ex. 1002) at ¶ 174. A POSITA would have implemented a pad in the combined handheld gaming devices based on Willner and Schoenith because Park taught using a pad as a simple way to increase stability for a computing device. Positioning a firm yet elastic cushioning pad on one of the sidewalls to make contact with the computing device would have increased the handheld gaming device’s grip on the computing device. Following Park’s teachings would have been straightforward.



Park Fig. 4 (annotated)

62. The “connecting assembly” includes an air tube, a contact sensor, a fan, an air offtake pipe, a check valve, and a controller. Park (Ex. 1004) at ¶ 48, Fig. 5. The assembly “allows for stable seating of a mobile phone” and “improv[es] the closeness of contact” between Park’s game controllers and “mobile phone (1) to prevent loosening or detachment.” Park (Ex. 1004) at ¶¶ 1, 49. A POSITA would have used Park’s connecting assembly in the combined handheld gaming devices based on Willner and Schoenith as a known way to avoid having a computing device held by the overall device detach. As noted in my Opening Declaration, including the connecting assembly as part of the combination of Schoenith and Park, which I suggested, would have made the computing device more secure. Opening Declaration (Ex. 1002) at ¶ 263.

2. Prof. Slocum Adopts Incorrect Assumptions about Combinations Based on Willner and Schoenith

63. Without citing evidence to support his assertions, Prof. Slocum states that there would have been several disadvantages to combining Willner and Park, Schoenith and Park, and Schoenith and Kessler. In reaching that conclusion, Prof. Slocum makes several unsupported assumptions that are false.

64. Prof. Slocum argues that different adaptors for Willner's device that were designed to accommodate "a computing devices 10 of a specific size" "may be made inexpensively with dedicated tooling." Slocum's Declaration (Ex. 2004) at ¶ 39. He similarly concludes for Schoenith's device that different sizes of cradles "to accommodate a smart device 30 of a specific size" "may be made cheaply." Slocum's Declaration (Ex. 2004) at ¶ 39. Prof. Slocum underestimates the cost of making separate adaptors or cradles. For example, producing adaptors and cradles of different sizes to accommodate mobile phones and tablets with different dimensions would have required substantial design and manufacturing engineering.

65. Also, Prof. Slocum does not consider that a manufacturer of Willner's or Schoenith's handheld gaming device would have needed to make a separate adaptor or cradle for each size of computing device. Those costs would have been significant given that in 2012 a single computing device manufacturer (Apple) had at least nine devices on the market with six different heights. Opening Declaration (Ex. 1002) at ¶¶ 151, 242, 327. That would have required six different adaptors for

use with Willner’s device or six different cradles for use with Schoenith’s device, just for Apple computing devices. Further, separate adaptors or cradles would have been required for a single device depending on whether a game was designed to be played with the computing device in landscape or portrait configuration, requiring at least 12 adaptors or cradles just for Apple computing devices.

66. Prof. Slocum states that the combinations of Willner and Park, Schoenith and Park, and Schoenith and Kessler would have “increased cost” as compared to Willner’s device or Schoenith’s device due to “multiple parts” and “assembly costs.” Slocum’s Declaration (Ex. 2004) at ¶¶ 42–44. I disagree. For example, Park’s adjustable bridge requires only two parts (panels), one with catching holes and another with protrusions that fit inside the catching holes. Park (Ex. 1004) at ¶¶ 32–35, Fig. 2(a). By comparison, as I explained above in ¶ 65, at least 12 adaptors or cradles would have been required to accommodate computing devices produced by one manufacturer. It would have been less expensive to manufacture the two portions of Park’s bridge rather than at least 12 different adaptors or cradles. Moreover, there would have been negligible or perhaps no assembly costs for Park’s two bridge panels. One panel slides into the other, which is an action a user can perform rather than the manufacturer. Park (Ex. 1004) at ¶¶ 33–35.

67. Although Kessler’s telescoping adjustable bridge has multiple parts, Prof. Slocum provides no evidence that constructing the bridge would have been

more expensive than manufacturing dozens of different adaptors or cradles for use with Willer's or Schoenith's handheld gaming device.

68. Prof. Slocum also fails to consider the cost to the consumer. Rather than requiring a collection of multiple adaptors or cradles, the combinations of Willner and Park, Schoenith and Park, and Schoenith and Kessler would not have required additional purchases to make it possible to use the handheld gaming device with different sizes of computing devices.

69. In addition, Prof. Slocum fails to consider the challenges that manufacturers faced in the video game and electronics market when attempting to distribute a large number of individual product SKUs.² Historically, I have personally sold video game products directly to large retailers, including WalMart, Toys 'R Us, Radio Shack, and Best Buy. Those retailers greatly value the limited physical space within a store where products can be displayed to potential customers. Adding a single SKU to a product line is (and was) challenging. Often a retailer would require a manufacturer to drop a SKU from the store's inventory in order to add a different SKU. Further, manufacturers are constantly scrutinized over metrics

² SKU ("stock keeping unit") is an industry term that refers to the unique number that is assigned to each product that a retailer carries in their inventory.

such as revenue generated per SKU or revenue generated per linear foot of retail space, making it difficult to maintain a product line with multiple SKUs.

70. One well-known example of the distribution challenges faced by a product with a large number of product SKUs relates to music-based video games. Rock Band (MTV), one of the biggest titles in the category, involved many SKUs, including the base game and a number of peripheral options, such as individual music instrument controllers, microphones, drum sets, add-on song collections, and other accessories. Mad Catz, the distributor of Rock Band 4 (2015), was “careful not to bombard [the retailers] with plastic add-ons - at least initially - and will only be releasing a couple of SKUs Retail space is an interesting challenge for us ... we are not flooding the market with a whole range of products ... what we have done is reduced the SKU count ... by not having things like the microphone stand, guitar straps and all the additional accessories, we've gone back to basics.”³ If a manufacturer seeks space for multiple SKUs, a retailer might opt out to conserve shelf space.

71. Based on my experience, it would have been difficult for a manufacturer of Willner’s or Schoenith’s handheld gaming device to find retail

³ <https://mcvuk.com/development-news/rock-band-4-going-back-to-basics-in-the-battle-for-retail-shelf-space/>.

distribution for a product line made up of multiple SKUs relating to adaptors and cradles compatible with different sizes of computing devices.

72. Prof. Slocum further argues that, compared to Willner's and Schoenith's handheld gaming devices with different adaptors (Willner) or cradles (Schoenith) for different devices, an "adjustable component" such as Park's or Kessler's bridge, is "typically more complex." Slocum's Declaration (Ex. 2004) at ¶ 41. As I explained above in ¶ 66, Park's bridge is simple with just two components. That configuration is less complicated than the multi-adaptor or multi-cradle designs in Willner and Schoenith. Moreover, the bridges of Park and Kessler are less complicated than the design for Willner's device or Schoenith's device. The bridges work with many sizes of computing devices without having to exchange components of a handheld gaming device. Opening Declaration (Ex. 1002) at ¶¶ 136-139, 150-153, 242-244, 328-330. Willner's device or Schoenith's device would have required swapping out different sizes of adaptors or cradles whenever computing devices with different sizes are used.

73. Prof. Slocum describes Park's and Kessler's adjustable bridges as "more compliant" and "thinner" than Willner's adaptor and Schoenith's cradle. Slocum's Declaration (Ex. 2004) at ¶¶ 42, 44. That is inconsistent with the teachings of the prior art. Kessler described its adjustable bridge as having "enhance[d]" "strength and rigidity." Kessler (Ex. 1006) at ¶ 89. The figures in Kessler also

indicate that Kessler's adjustable bridge was thicker than Willner's adaptor or Schoenith's cradle. Kessler (Ex. 1006) at Figs. 12, 13, 15, 17, 19; Willner (Ex. 1003) at Fig. 4; Schoenith (Ex. 1005) at Fig. 3. Some embodiments of Park's bridge also appear to be as thick as or thicker than Willner's adaptor or Schoenith's cradle. Park (Ex. 1004) at Figs. 2(a), (b).

D. A POSITA Would Have Connected Components in the Combined Handheld Gaming Devices Using Screws or Snap-Fit Connectors

74. Prof. Slocum opines that that it would have required "undue experimentation" for a POSITA to connect the adjustable bridges of Park or Kessler to the handheld gaming devices of Willner or Schoenith using screws or snap-fit connectors. Prof. Slocum's Declaration (Ex. 2004) at ¶¶ 74, 104, 132. Without providing any evidence to support his opinions, Prof. Slocum argues that Willner's or Schoenith's design "does not provide the physical space necessary" to make a connection sufficient for "normal" operation, that the screws or snap-fit connectors would have "interfere[d]" with other components in Willner's or Schoenith's devices, and that it would have been necessary to describe "where or how" to position the connectors and specify connector size. Prof. Slocum's Declaration (Ex. 2004) at ¶¶ 74–75, 104–105, 132–133.

75. The state of the prior art at the time of the alleged invention demonstrates that a POSITA would have successfully used screws or snap-fit connectors to join Park's or Kessler's adjustable bridge with Willner's or

Schoenith's handheld gaming device. At deposition, Prof. Slocum described that a POSITA would have used any one of several known connectors (e.g., screws, snap-fit connectors, dovetail, Velcro) when connecting Park's bridge to the controllers in Park's handheld gaming device. Deposition Transcript of Prof. Slocum (Ex. 1041) at 199:2–200:18. Prof. Slocum agrees that a POSITA would have known how to attach an adjustable bridge to sidewalls. Deposition Transcript of Prof. Slocum (Ex. 1041) at 223:8–224:7.

76. As I explained above at ¶¶ 15–16 and 20–21, over 40 years ago it was commonplace to attach portions of a handheld gaming device using screws or snap-fit connectors. Those connectors were well known at the time. As explained in my Opening Declaration, the iPhone 4, a prior art handheld gaming device released in 2010, connected components using small screws with a length of 0.8 mm. Opening Declaration (Ex. 1002) at ¶¶ 209, 294, 378. Apple used screws to attach the rear case to the front of the mobile phone while achieving a device that was suitable for normal operation. Opening Declaration (Ex. 1002) at ¶¶ 209, 294, 378.

77. Schoenith also described screws and snap-fit connectors as known mechanisms for connecting portions of a handheld gaming device, as I proposed for the combinations of Willner and Park, Schoenith and Park, and Schoenith and Kessler. Schoenith disclosed using screws or snap-fit connectors to join the cradle structure (which includes the “raised walls” that are part of Schoenith-based

combinations) to the gaming controllers described in Schoenith. Schoenith (Ex. 1005) at 7:16-26 (“The cradle may have one or more connection parts providing secure connection to the right side panel and the left side panel. The connection can be any connection commonly utilized in controllers, preferably a connection which allows for easy and frequent assembly and disassembly of the controller, such as a magnetic connection, a **snap-fit connection**, mechanical keys, a combination thereof, or the like. **The snap-fit connection can be any shape, size, configuration or a combination thereof**, such as a cantilever beam snap fit, a cylindrical snap fit, a spherical snap fit, a combination thereof, or the like.”), 8:27-34 (“The connection between the right side panel, the left side panel, and the cradle can be any connection as described above, such as a magnetic connection, a **snap-fit connection**, a combination thereof, or the like. Additionally, the right side panel and the left side panel may be attached to the cradle by means of glue application or fasteners including but not limited to **screws**, bolt, nuts, a combination thereof, or the like.”) (emphasis added). Schoenith did not need to explain the size or placement of the connectors to a POSITA. Instead, the reference recognized that snap-fit connectors “can be any shape, size, configuration or combination thereof.” Schoenith (Ex. 1005) at 7:23-26.

78. Schoenith confirms that it would have been routine for a POSITA to use screws or snap-fit connectors to connect Park’s or Kessler’s bridges to the

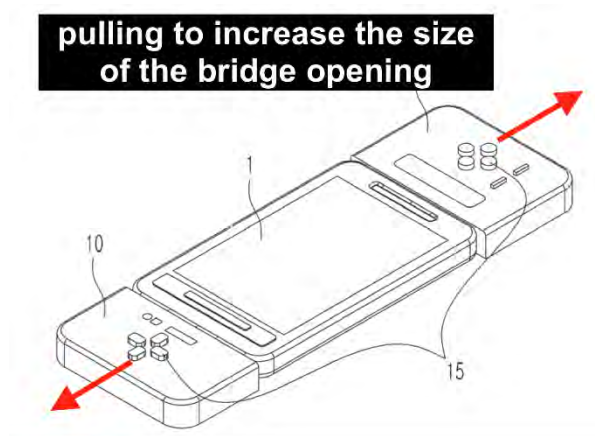
sidewalls in the combined handheld gaming devices based on Willner and Schoenith. No additional information would have been needed for a POSITA to implement the connectors. If, during the design process, it became clear that the size or positioning of the connectors, or the contours or thickness of the sidewalls or adjustable bridge, needed to be altered to accommodate a secure connection, a POSITA simply would have made the required adjustments as part of basic product engineering. A POSITA would have known how to implement connections based on screws and snap-fit connectors without any guidance.

79. Schoenith also mentioned glue as another well-known method at the time of the alleged invention that a POSTIA would have used to connect components of a handheld gaming device. Schoenith (Ex. 1005) at 8:30-34. Applying an adhesive to connect components would have been straightforward and required no further explanation.

E. Park’s Bridge Is Not Flawed and, Even If There Were Issues, a POSITA Would Have Resolved Them

80. Prof. Slocum argues that Park’s bridge is “fundamentally flawed” because the ratcheting mechanism using protrusions and catching holes for adjusting the bridge’s width “compromises [the Park handheld gaming device’s] ability to retain a mobile device between its controller bodies during normal user operation.” Prof. Slocum’s Declaration (Ex. 2004) at ¶¶ 72–73, 85. Prof. Slocum states that because “there is no positive mechanical retention of the protrusions (41) in the

catching holes (32b),” “during normal operation the user is likely to apply pull forces that cause the protrusions (41) to disengage from the catching holes (32b), resulting in [a] computing device (10) coming out.” Prof. Slocum’s Declaration (Ex. 2004) at ¶ 73. The annotated version of Park’s Figure 3 below illustrates the “pulling” that Prof. Slocum describes. I disagree with Prof. Slocum’s conclusions for several reasons.



Park Fig. 3 (annotated)

81. First, as explained above in ¶¶ 30–39, Prof. Slocum relies on an incorrect understanding of the “normal” operation of the combined handheld gaming devices. A POSITA would have readily understood that normal usage of a handheld gaming device such as the one pictured above would have been to hold the unit with both hands, one on each side, with thumbs at the ready to operate the controller inputs, as shown in the image below.⁴ When holding a device during gameplay, the

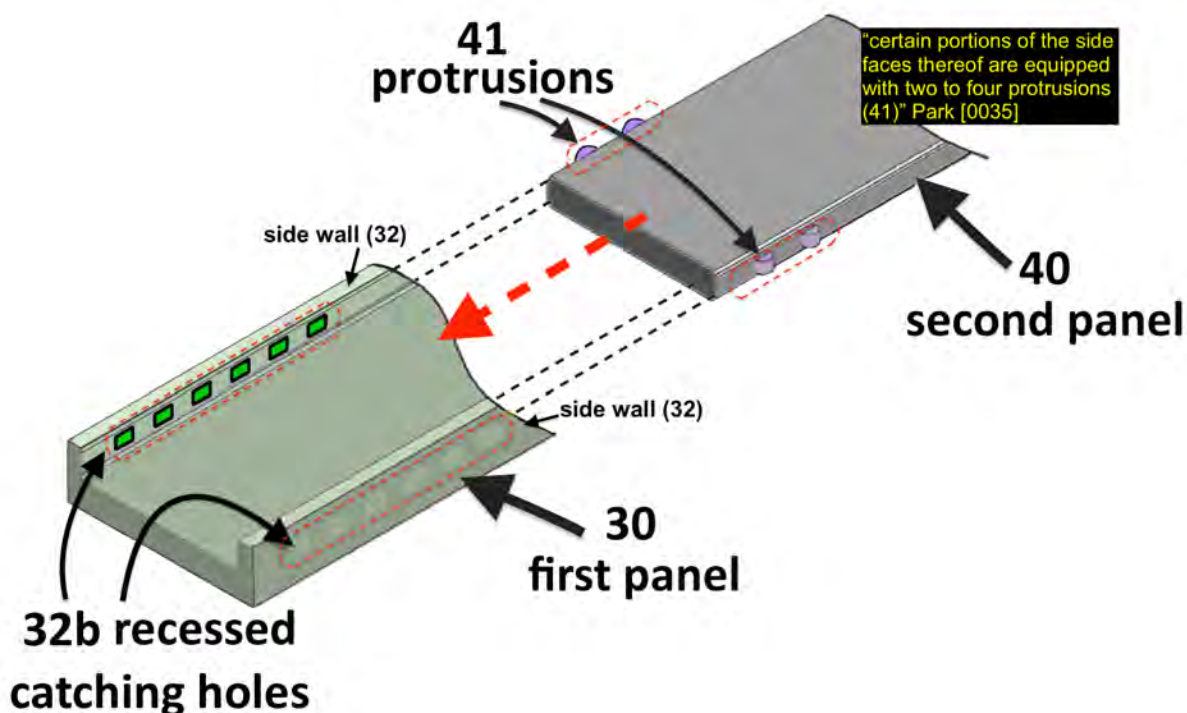
⁴ <https://www.imore.com/gaming/gamevice-flex-review>.

player would have firmly gripped the gaming controllers and would not have pulled their hands away from the gaming controllers and screen during gameplay.



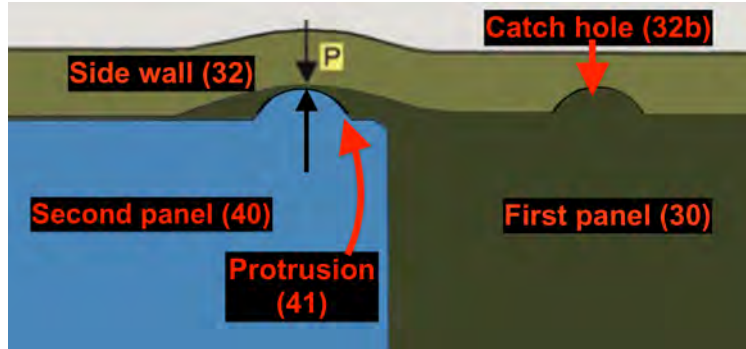
82. Second, Prof. Slocum provides no explanation or evidence to support his assertion that “normal” operation would have involved a user applying “pull forces that cause” that would have dislodged a computing device from Park’s handheld gaming device. Prof. Slocum’s Declaration (Ex. 2004) at ¶ 73. Park taught that its bridge “sufficiently allow[ed] for a mobile phone (1) to be mounted on the device ... and used.” Park (Ex. 1004) at ¶ 41. This statement reflects that during ordinary use of Park’s bridge, a computing device would have been securely held in the handheld gaming device. It is only in “severe” use cases that the computing device might “come loose” or “become detached.” Park (Ex. 1004) at ¶ 41.

83. As shown in the annotated and modified version of Park's Figure 2(a) below, Park's bridge design involves a pair of surfaces in which one surface has a circular protrusion (41), while the other surface has a recess—catching hole (32b)—that fits the shape of the protrusion. The surface with the recess has a certain amount of elasticity, which allows the protrusion to deflect the surface until the protrusion and the recess line up, at which point the recessed surface snaps back, surrounding the protrusion.



Park Fig. 2(a) (modified and annotated)

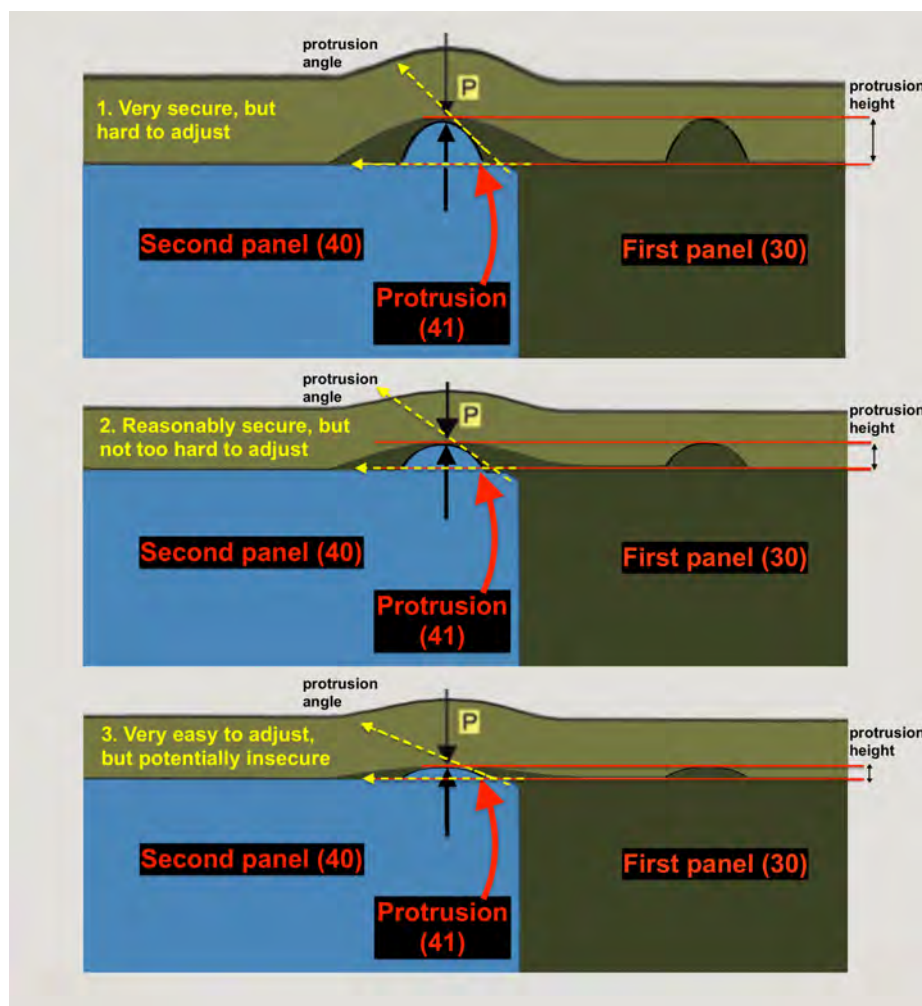
84. The image below illustrates what happens when a user inserts second panel (40) into first panel (30). Protrusion (41) creates a force on the surface of side wall (32), which flexes outward.



85. The forces between the surface of the side wall and the protrusions dictate how difficult it is to move second panel (40) in and out of first panel (30). If the forces between the protrusion and side wall are strong, the bridge would have been difficult to adjust (i.e., required more lateral force to move) but the connection would have been more secure when the protrusions snapped into place (because it would have required more force to dislodge). If the forces between the protrusion and side wall are weak, it would have been easy to move the bridge, which would also have made it prone to being moved inadvertently.

86. The forces are dictated by the geometry of the design, i.e., the dimensions of the protrusion and the angles between the protrusion and the surfaces. During a typical design process, with the appropriate mathematics at hand, the forces would have been calculated, tested, and adjusted by an industrial designer to find a connection that would not have been too difficult to adjust, but also would have been secure.

87. The diagrams below demonstrate one way in which a designer would have adjusted Park's bridge to find a suitable result. The three examples (from top to bottom) go from a larger, steep angle protrusion (very secure, but hard to adjust) to a middle option (reasonably secure, but not too hard to adjust), and finally to a small, minimal angle protrusion (easy to adjust, but potentially insecure).



88. Prof. Slocum opines that Park's bridge connection "fatally compromises [the Park device's] ability to retain a mobile device between its controller bodies during normal user operation." Prof. Slocum's Declaration (Ex.

2004) at ¶ 72. But Park does not disclose the size and angle of the protrusions. Because that information is not available, it is not reasonable for Prof. Slocum to conclude that the bridge would not have retained the mobile device. Prof. Slocum offers no evidence to support his conclusion that Park's protrusions and catching holes in the adjustable bridge would make the bridge unable to retain a mobile device between its controller bodies during normal user operation. Park taught the opposite: the mobile device would be "mounted on the [bridge] ... and used" in ordinary operation. Park (Ex. 1004) at ¶ 41.

89. Third, even if Prof. Slocum's unsupported opinion about Park's bridge were correct, a POSITA implementing the bridge would have used a design that was both secure and easy to use. If the bridge pulled apart too easily, one basic solution would have been to make it more difficult to expand Park's bridge to decrease the likelihood that a user would have unintentionally pulled the bridge apart. That design objective would have been accomplished by making the catching holes and protrusions larger so that more pull force would have been required to dislodge the protrusions from the catching holes to expand the bridge. If there were issues with Park's bridge, Prof. Slocum recognized that it would have only taken a "day or two to get it right." Deposition Transcript of Prof. Slocum (Ex. 1041) at 208:8–209:4.

90. Kessler taught another known technique for avoiding unwanted bridge expansion. Kessler's adjustable bridge included tensioning mechanisms that biased

the bridge to a narrower or “closed” configuration. Kessler (Ex. 1006) at ¶ 99 (“[T]here are provided respective pairs of biasing means 160 (figure 12) in the form of coil springs 162 attached between the handle housings 12, 14 and respective ones of the primary sections 88, 90 of the slide mechanism 84 to thereby bias said primary sections 88, 90 to their closed state within the handle housings 12, 14.”), ¶ 100 (“The biasing mechanism or system 144, 146 for placing the flexible circuit 114 under tension is preferably the primary biasing mechanism for causing the sections of the sliding mechanism to automatically close together.”). One way to create bias, as taught in Kessler, was to use springs attached to the bridge and the controllers (“handle housings”) to pull the controllers together and contract the bridge, which fits within the controllers. Kessler (Ex. 1006) at ¶ 99 (“Each spring 162 is arranged such that is attached between a respective handle housing and a respective one of the primary sections of the sliding mechanism. As such, the springs’ primary function is to bias the primary sections of the sliding mechanism to their closed positions within their respective handle housings.”). Springs 162 are shown in Kessler’s Figure 12 below.

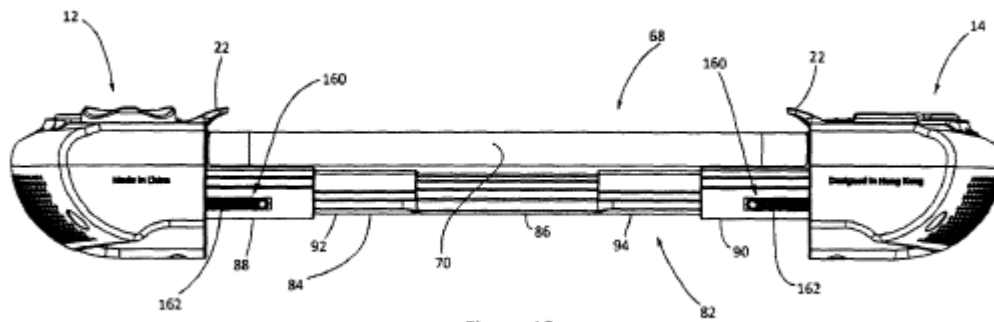
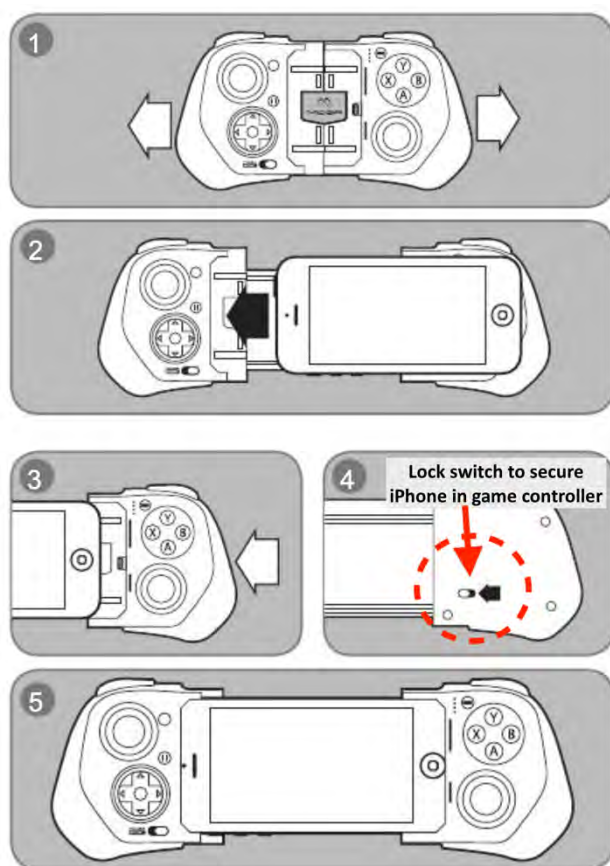


Figure 12

91. The biasing disclosed in Kessler “resist[s] movement of the handle housings 12, 14 away from each other and is of a sufficient strength so as to provide a sufficient gripping force for holding a handheld information processing device 70.” Kessler (Ex. 1006) at ¶ 101. Based on Kessler’s teachings, when incorporating Park’s bridge into Willner’s or Schoenith’s handheld gaming device, a POSITA would have implemented known approaches, such as the springs disclosed in Kessler, to bias Park’s bridge to a narrower configuration so that the handheld gaming device gripped and held a computing device.

92. In combinations based on Park’s bridge, a POSITA also would have implemented a locking mechanism in the combined handheld gaming devices to enhance computing device stability. A locking mechanism was a well-known positive mechanical approach in the state of the art that improved computing device retention and was common in prior art handheld gaming devices.

93. For example, the MOGA ACE POWER, an iPhone-compatible game controller that shipped in 2013⁵ and was available at least as of Nov. 30, 2014, had an adjustable bridge that held a computing device (iPhone) in place. Upon expanding the bridge to an appropriate size, the controller had a “LOCK” button that “secure[d] the device” in the game controller, as shown below. MOGA ACE POWER manual (Ex. 1040) at 1 (emphasis added).



1. Expand your MOGA ACE POWER (see figure 1)

2. Insert the top of your device into the left-hand side of your MOGA ACE POWER (see figure 2).

3. Gently pull your MOGA ACE POWER apart and connect the Lightning connector, then gently close your MOGA ACE POWER (see figure 3).

4. Secure your device by sliding the S.M.R.T **LOCK switch** to Lock (see Figure 4).

MOGA ACE POWER manual (annotated)

⁵ <https://appleinsider.com/articles/13/12/20/review-moga-ace-power-game-controller-for-apples-iphone>.

94. In addition, Megadream released the Wireless Android Game Controller for PUBG in 2014⁶ (model number 600). As shown in the figures below, the controller featured an adjustable bridge with a locking mechanism that secured a computing device in the handheld gaming device. The locking mechanism is shown inside the dashed red box in the image on the right.



Megadream Wireless Android Game Controller for PUBG (annotated)

F. Hirschman Anticipated and Renders Obvious Claims 1–4 and 6–7

95. My Opening Declaration explains how Hirschman anticipated and renders obvious claims 1–4 and 6–7. Opening Declaration (Ex. 1002) at ¶¶ 405–482.

⁶ <https://www.ubuy.com.om/en/product/2O39J7EI-wireless-ios-android-game-controller-for-pubg-fotnite-megadream-key-mapping-gamepad-joystick-for-iph>.

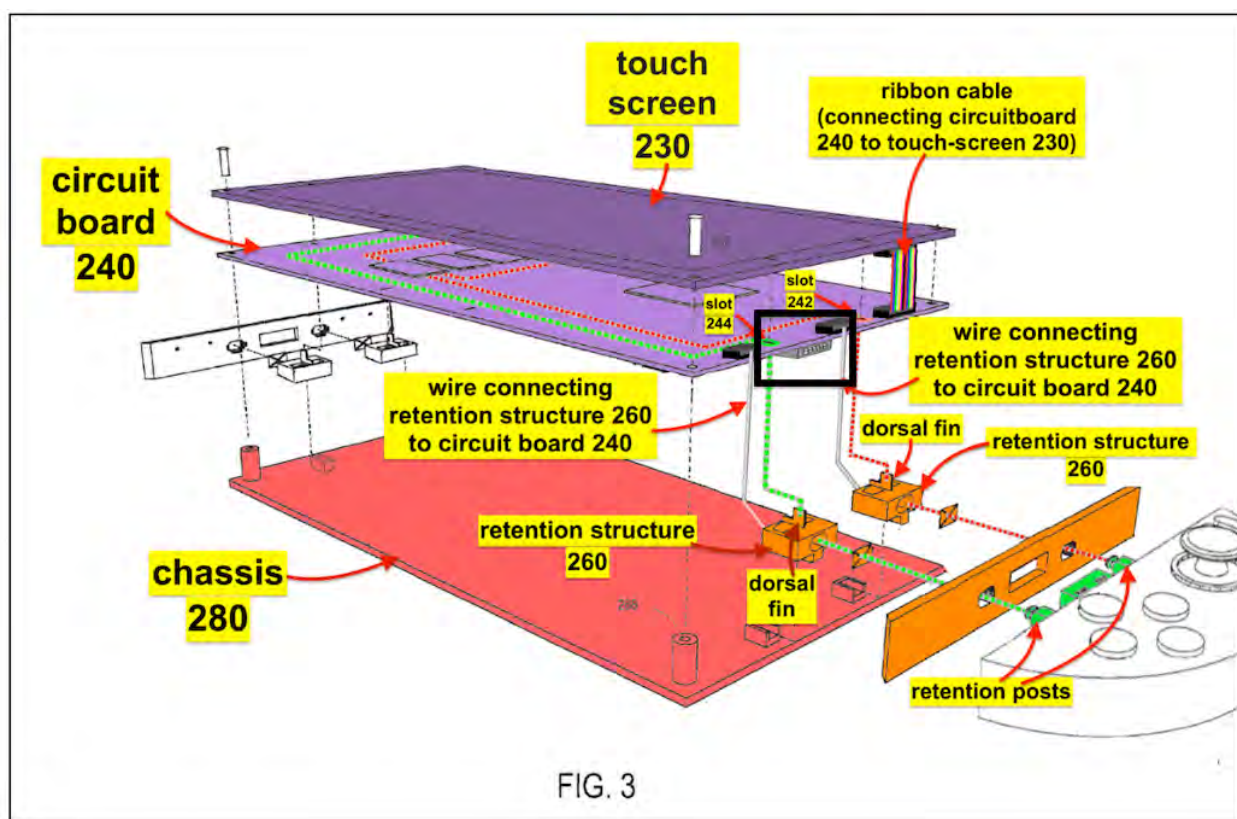
Prof. Slocum challenges those opinions in several ways, but his positions are based on an incorrect understanding of Hirschman and my opinions.

1. I Did Not Remove the USB Communications Port from Hirschman's Device

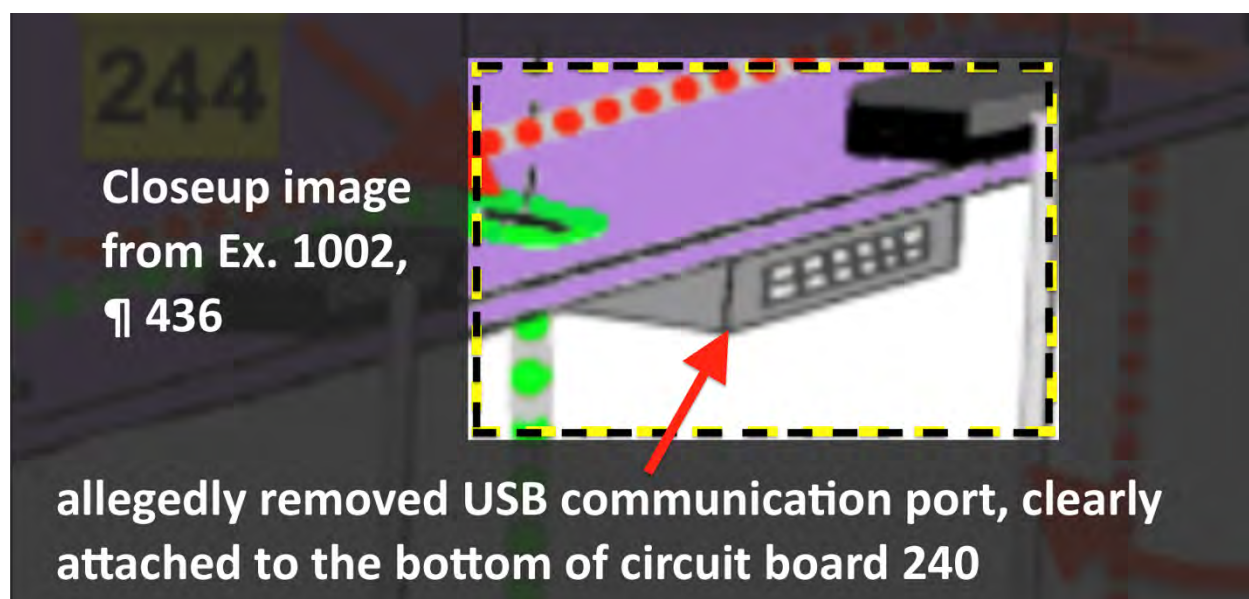
96. Prof. Slocum repeatedly states that when comparing the claim limitations of the '393 to Hirschman I “remov[ed] USB communication port 242 from circuit board 240.” Prof. Slocum's Declaration (Ex. 2004) at ¶ 147; Prof. Slocum's Declaration (Ex. 2004) at ¶ 156 (“Mr. Kitchen's removal of USB communication port 242 entirely from his modified version of Hirschman”), ¶ 164 (“Mr. Kitchen attempt to modify Hirschman by removing USB communication port 242”), ¶ 171 (“Mr. Kitchen improperly attempts to modify Hirschman by removing USB communication port 242”).

97. I did not propose removing the USB connector port from Hirschman. Prof. Slocum does not explain how any portion of the Opening Declaration supports his statements. Although he refers to an annotated version of Hirschman's Figure 3 from my Opening Declaration, which is reproduced below, that figure includes the USB communication port. Prof. Slocum's Declaration (Ex. 2004) at ¶ 147; Opening Declaration (Ex. 1002) at ¶ 436. The closeup figure below clearly shows the USB communication port surface-mounted on the bottom of circuit board 240. Further, my Opening Declaration notes that Hirschman includes “multiple communications ports 242, for example USB 2.0 ports.” Opening Declaration (Ex. 1002) at ¶ 411;

Hirschman (Ex. 1007) at ¶ 56. Hirschman further taught using the USB communications port to carry power or signals. Electrical power or signals are passed between the portable computer system and gaming accessories “via retention structures 260 and retention posts 160 ..., either alone or in conjunction with **communications ports 242** and communications connector 164.” Hirschman (Ex. 1007) at ¶ 59 (emphasis added).

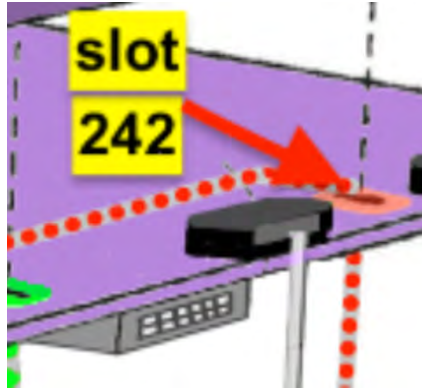


Prof. Slocum’s Declaration (Ex. 2004) at Fig. 20, ¶ 147 (annotated)
Opening Declaration (Ex. 1002) at ¶ 436 (annotated)



**Inset closeup from Prof. Slocum's Declaration (Ex. 2004) at Fig. 20, ¶ 147
(annotated)**

98. There is a typographical error in the original image in my Opening Declaration. The error is shown in the closeup figure below. Opening Declaration (Ex. 1002) at ¶ 436. The red circuit board slot to the right of the USB communication port is labeled “242,” which is the reference number for the USB communication port. Hirschman (Ex. 1007) at ¶ 56. The label is incorrect. It should have been “244,” which is the reference number for the circuit board slot. Hirschman (Ex. 1007) at ¶ 58 (“The retention structures 260 may have a ‘dorsal fin’ structure 262, which may fit into slots 232 and 244.”), Fig. 3. Despite the error, the text and figure of my Opening Declaration explain that the USB communication port is a part of Hirschman’s device, and the USB communication port is clearly visible mounted on the bottom of the circuit board, as shown in the figure below.



Inset closeup from Opening Declaration (Ex. 1002) at ¶ 436 (annotated)

2. Hirschman’s Sidewalls and Retention Structures Are “Confinement Structures”

99. Prof. Slocum states that “Hirschman’s sidewalls 282 and retention structures 260 are not ... connected to one another” so a POSITA would not have understood them to “form[] a ‘confinement structure.’” Prof. Slocum’s Declaration (Ex. 2004) at ¶ 153. I disagree.

100. Based on Hirschman’s teaching, a POSITA would have understood that the sidewalls and retention structures are connected. Opening Declaration (Ex. 1002) at ¶ 420. In response to those opinions, Prof. Slocum states that the sidewalls and retention structures were also connected to the chassis. Prof. Slocum’s Declaration (Ex. 2004) at ¶ 155. While the combination of the sidewalls and retention structures is attached to the chassis via brackets (Opening Declaration (Ex. 1002) at ¶ 421), that does not affect whether the sidewalls and retention structures are connected to one another.

101. Prof. Slocum suggests that connecting the sidewalls and retention structures would not have been necessary to prevent dust or other particles from damaging electronics within the retention structures. Prof. Slocum’s Declaration (Ex. 2004) at ¶ 156. Prof. Slocum argues that dust covers 270 “prevent intrusion of dust through retention structures 260.” Prof. Slocum’s Declaration (Ex. 2004) at ¶ 156. As described in my Opening Declaration, those covers would not have been effective unless the sidewalls were connected to the retention structures. Opening Declaration (Ex. 1002) at ¶ 422. If the two components were not connected, dust could have entered the retention structures through the space between the sidewalls and the retention structures. Prof. Slocum does not address this point.

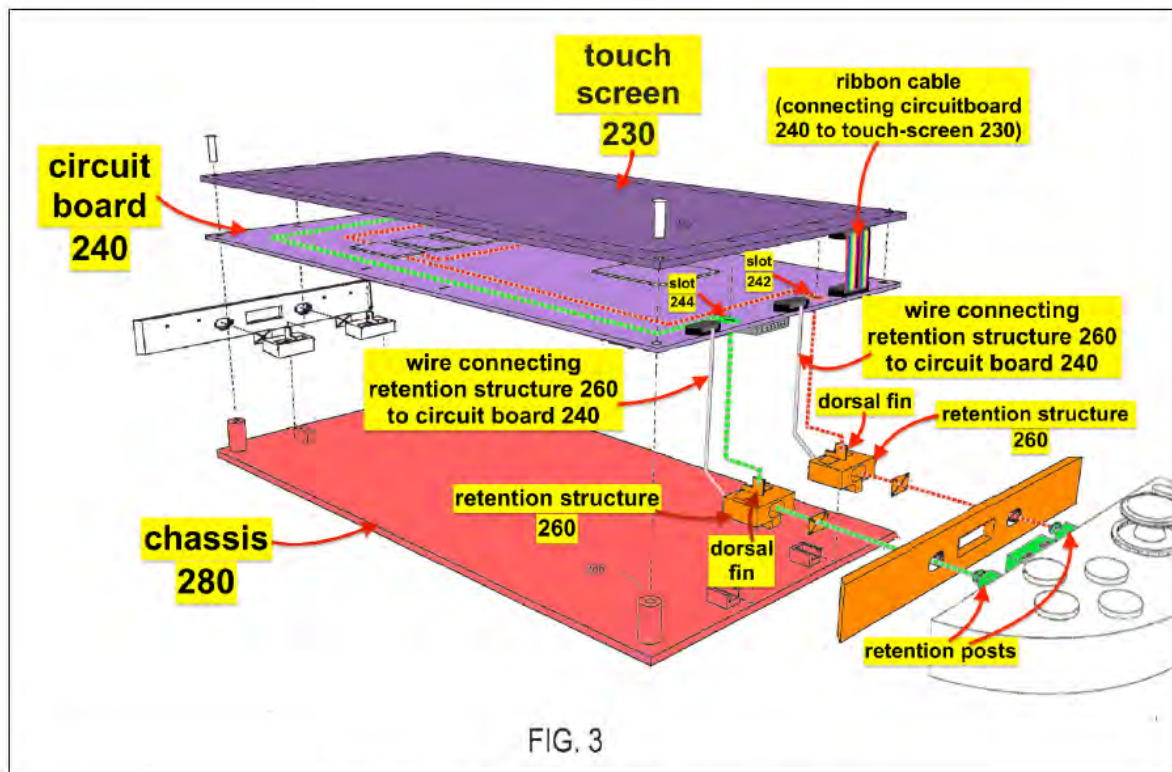
102. Prof. Slocum further argues that the retention structures are “properly considered” part of the chassis, which is the “structural bridge,” and not part of the sidewalls, which he acknowledges are “confinement structures.” Prof. Slocum’s Declaration (Ex. 2004) at ¶ 157. This opinion ignores that the retention structures are connected to the sidewalls, as explained above. It also fails to consider the function of the retention structures. They “**secure** the touch-screen 230 and circuitboard 240,” which are part of the computing device in Hirschman. Hirschman (Ex. 1007) at ¶¶ 57–58 (emphasis added). The retention structures’ function is consistent with the function of the structures in Nintendo’s Switch that Gamevice argues infringe the “confinement structures” limitation. Opening Declaration (Ex.

1002) at ¶ 416. It is also consistent with Prof. Slocum’s view that components that hold the circuit board in place are confinement structures. Deposition Transcript of Prof. Slocum (Ex. 1041) at 122:13–19.

3. A POSITA Would Have Used Wires to Connect Retention Structures and Posts to Other Components

103. Prof. Slocum states that a POSITA would not have used wires to connect retention structures to the circuit board in Hirschman’s device. Prof. Slocum’s Declaration (Ex. 2004) at ¶¶ 164–167. As explained in my Opening Declaration, however, Hirschman taught that “[c]ommunication signals may travel through retention structures 260,” requiring some form of connection (such as a well-known wired connection) between the retention structures and posts and the rest of Hirschman’s computing device, like the circuit board. Hirschman (Ex. 1007) at ¶ 60. Hirschman disclosed that signals “may flow via retention structures 260 and retention ports 160 ... alone,” without the use of a USB communication port or any other type of connection. Hirschman (Ex. 1007) at ¶ 59. It would have been important to ensure that the retention structures and posts were able to communicate with the computing device in that configuration. Prof. Slocum testified at deposition that Hirschman disclosed wires “potentially running from the retention structures 260 to the circuit board 240.” Deposition Transcript of Prof. Slocum (Ex. 1041) at 175:22–176:5. Exemplary wired connections are shown in the annotated and modified version of Hirshman’s Figure 3 below. Opening Declaration (Ex. 1002) at

¶¶ 436–437. As described above at ¶ 23, a POSITA would have been familiar with wired connections, such as the ribbon connector in the space-themed handheld gaming device I developed well before the priority date of the '393 patent. Even at that time, wired connections were well known in the prior art.



Hirschman Fig. 3 (modified and annotated)

IV. CONCLUSION

104. As explained above, I stand by the opinions in my Original Declaration that claims 1–7 of the '393 patent are unpatentable.

105. This declaration is based on my present assessment of materials and information currently available to me. My investigation and assessment may continue, which may include reviewing documents and other information that may

yet be made available to me. Accordingly, I expressly reserve the right to continue my study in connection with this case and to expand or modify my opinions and conclusions as my study continues.

I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true, and that these statements were made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001, and that such willful false statements may jeopardize the petition for *inter partes* review.

Dated: April 23, 2024



Garry Kitchen