

Filed on behalf of: Otter Products, LLC

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

OTTER PRODUCTS, LLC,

Petitioner,

v.

SAFETRAY PRODUCTS LTD,

Patent Owner.

Case No.: IPR2025-622
U.S. Patent No. 10,113,691

DECLARATION OF PAUL HATCH IN SUPPORT OF PETITION
FOR INTER PARTES REVIEW OF U.S. PATENT NO. 10,113,691

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I, Paul Hatch, declare as follows:

I. INTRODUCTION

1. I am an independent consultant. I am over eighteen years of age, and I would be competent to testify as to the matters set forth in herein if I am called upon to do so.
2. I have prepared this Declaration for consideration by the Patent Trial and Appeal Board in the *Inter Partes* Review of U.S. Patent No. 10,113,691 (the “’691 Patent”).
3. I provide this Declaration at the request of Petitioner Otter Products, LLC (“Petitioner”) in connection with the above-captioned *Inter Partes* Review. I have been informed and understand that Petitioner contends that Claims 1-20 of the ’691 Patent are unpatentable.
4. I have been asked to provide my opinions regarding whether Claims 1-20 of the ’691 Patent are unpatentable because they were anticipated by or would have been obvious to a person of ordinary skill in the art (a “POSITA”) at the time of the invention in light of the prior art. After careful analysis, it is my opinion that the subject matter of Claims 1-20 would have been anticipated, or otherwise obvious to a POSITA, as set forth in this declaration.

5. I am being compensated at my standard hourly rate of \$450 per hour. My compensation is not dependent on the outcome of the above-captioned *Inter Partes* Review. I have no interest in either of the parties.
6. In forming my opinions, I relied on my knowledge and experience in the field and on documents and information referenced in this Declaration.
7. My complete qualifications and professional experience are described in my Curriculum Vitae, a copy of which is attached hereto as **Appendix A**. The following is a brief summary of my relevant qualifications and professional experience.
8. As shown in my Curriculum Vitae, I have extensive academic and industry experience in industrial design and mechanical engineering of mass-produced consumer and industrial products. I am the recently retired CEO of TEAMS Design USA, a global product design consultancy. I have designed many mass-produced products, including consumer electronics devices such as tablets, laptops, cameras, keyboards and computer periphery, and accessories such as protective cases for tablets and laptops, travel and storage cases. I have also designed many mass-produced products that involve the design of unique mechanical principles such as hinges and clasps for power tool accessories, storage cases and small devices. I have also designed many products that

center around human factors and ergonomic improvements, such as chairs, power tools, garden equipment, consumer electronics, fitness equipment and kitchen appliances. Among the hundreds of mass-produced products I have designed, many featured ergonomically designed handles, some of which are products that were recognized by design awards and patents (see Paragraphs 11-13 and 18-21, below).

9. With TEAMS Design, I was actively involved in all phases of the development process, including the user research, idea conceptualization, styling, visual brand language, ergonomic design, mechanical engineering, and overseeing the final productions stages.
10. I hold a Bachelor of Arts degree with honors in Design for Industry from the University of Northumbria at Newcastle, United Kingdom. While studying to obtain my degree, I took courses covering subjects including mechanical engineering, ergonomics, technical drawing, computer-aided drawing, product styling and brand language, product evaluation, usability testing, production techniques and prototyping.
11. I am a named inventor on over 50 design and utility patents. In fact, the ergonomic design of handles has been a key feature in 30 of these. A full list of these patents is attached hereto as **Appendix B**.

12. As one example of my relevant experience in designing grips for the purposes of improved stability and ergonomics, one of these patents include U.S. Patent No. 9,132,559, which is titled “Cutlery having improved gripping ergonomics” and claims a priority date of May 27, 2009. As explained in its background section the ’559 Patent, the invention claimed in the ’559 Patent was developed to fill the need for a knife that is “ergonomically designed to position a user’s hand to a position that allows better control of a blade portion of the knife.” I am also a named inventor of U.S. Patent Publication No. 2010/0037787, titled “Rotary Food Cutter with Removable Blade Assembly,” which includes teachings directed towards incorporation of concave shapes in a thumb grip to “allow a user to better guide the rotary cutter while in use” (that is, exert better control over the rotary cutter) and incorporating other convex shapes in the release surfaces of the rotary cutter that are “ergonomically shaped to match a finger.”
13. I am also a named inventor on U.S. Patent No. 6,754,935, which is directed to a “Power tool handle” and claims a priority date of December 4, 2003. The ’935 Patent includes teachings explaining how the claimed handle can be manufactured through the use of injection molding of thermoplastic elastomers. See ’935 Patent, at 6:52-55; *and see id.* 2:37-38 (“Preferably, the

handle 10 is made of molded plastic.”). My patent for a “[f]ood product dispenser and valve,” issued as U.S. Patent No. 9,717,354 and which claims a priority date of August 29, 2014, includes similar teachings related to injection molding. It teaches that a structural frame “may be formed as a single piece” including through use of “injection molded plastics.” ’354 Patent, [0067]. As shown in these patents, I had experience in manufacturing techniques for plastic products (including, notably, injection molding) as of the claimed priority date for the ’691 Patent.¹

14. I have written papers and spoken at many universities across the U.S. on the topic of design, technology and manufacturing. I have published two books about design, written many articles, and given many keynote talks on design, technology and manufacturing. I have also been interviewed on television and in podcasts about my experience in designing manufactured consumer products. In 2018, I was nominated to the prestigious Academy of Design

¹ *And see* U.S. Patent No. 7,708,167 to P. Hatch et al. (May 4, 2010, priority of Feb. 1, 2007), 3:13-18 (“container member 18 may be a single molded plastic piece”).

Fellows of the IDSA (Industrial Design Society of America), to which only two people are elected each year.

15. I have provided testimony as an expert in over 20 cases, including as noted on my attached CV. For example, I served as a testifying expert on behalf of the defendants in *Spigen Korea Co. Ltd. v. Ultraproof Inc.*, No. 2:17-cv-01161 (C.D. Cal. Feb. 2017) and *Spigen Korea Co., Ltd. V. Lijun Liu et al*, No, 2:16-cv-09185 (C.D. Cal. Dec. 2016) (consolidated), which opinion related to the invalidity of certain design patents related to smart phone covers. *See id.* ECF 215, at 2. The Court credited my opinions relating to invalidity of the asserted design patents, in an opinion finding the design patents invalid.
16. I am not an attorney and offer no legal opinions. In the course of my work as a designer and managing teams of designers, I have gained an understanding of the training, knowledge, skills, and abilities of a person skilled in the art of product design.
17. I have previously provided expert testimony in other patent-related matters. A detailed list of cases for which I have provided expert testimony is included in **Appendix C**.

My ergonomic design at TEAMS Design

18. TEAMS Design is known for its ergonomic-centered design work. The original founder of the company, Hans-Erich Slany is considered one of the twelve founding fathers of ergonomics in Europe. In the 1950s and 1960s he conducted detailed research into how people used tools on assembly lines and uncovered new insights on the effect of how tools are handled can have on blood flow, cramping, and muscle strain and how those effects can have knock-on effects across the entire body. These early studies helped identify issues with the median nerve being compressed at the wrist, now widely known as carpal tunnel syndrome (CTS). He provided guidelines to Bosch on how engineers and designers should design touchpoints such as handles and knobs and how to position them in regard to the center of gravity and any rotational forces, and wrote a book specifically on the ergonomic design of hand-held objects. These same principles are still used by Bosch today, and are certainly at the heart of why Bosch tools are known for their good ergonomics and handling. I continued Mr. Slany's focus on ergonomics for the two decades I led the consultancy after he retired. Ergonomic principles continued to be an essential aspect of every product for every client we designed at TEAMS, and an integral part of my daily workflow.. Sometimes

the improvement to the ergonomics is the key feature of a new product, but often they simply become an invisible but essential part of a design—something the user wouldn't notice unless it wasn't there.

Table 1: Hans-Erich Slany supported Bosch's successful debut into the power tool market in 1956 using his own ergonomic principles.



19. Before joining TEAMS Design, I had already studied ergonomics as part of my industrial design degree, and some of my early student work and internship work already featured close attention to how the object conforms to the hand. My very first produced object, for example, was a cheese knife for WMF that featured an ergonomically sculpted handle. However, what I learned from Mr. Slany went well beyond anything I had learned before and

makes a great difference to ergonomic quality of my work even today. He taught that ergonomic comfort exists in two separate domains; short term comfort and long term comfort. For example, short term comfort relates to how a handle feels in the hand, what positions it allows and what surfaces, edges and contours it has to guide the user's fingers. Long term comfort relates to providing angles and shapes that avoid hindering blood flow or providing enough space for the hand to move or re-grip as the muscles tire, especially when holding an object for long periods of time.

20. In one design project for World Kitchen, we were tasked to find a “unique approach” to kitchen knives for their Chicago Cutlery line. Among other research, we attended a ‘cutting class’ at a local Cooking School where we found that professionals are trained to grip the knife further forward of the handle—essentially at the center of gravity on the blade itself. Doing so gave the user more control and cutting force, making cutting remarkably easier. We aimed to find a way for the design of the handle to encourage the user to position their hand further forward but without feeling like they are grabbing the blade. This guidance would have to be done by the look and feel of the knife handle alone, as we could not rely on retraining the user through advertising or a printed manual. After much experimentation we found a

shape that felt quite natural to grab in the ‘pro position’ which improved the average user’s ability to control the blade. We removed the traditional bolster that puts a wall between the blade and the handle, and made the handle and blade seemingly merge. We also added some design details to both physically and visually communicate the primary ‘pinch point’ area at the center of gravity. We tested the prototypes against traditional knives by having users cut vegetables with each and asked only which knives had the *sharpest blades* (whereas the blades were identical). We found users naturally grabbed the knives in the pro position for most tasks, and 98% remarked that the knives with the new design had much “sharper” blades, despite being identically sharp. The knives went into production and, despite a higher cost, became one of the brand’s all-time bestselling products.

21.

Table 2: Good handling and ergonomics is a key attribute of most of my work







II. INFORMATION CONSIDERED

22. I have considered the following documents in connection with preparing this declaration.

Exhibit	Description
EX1001	The '691 Patent
EX1002	The prosecution history of the '691 Patent
EX1004	U.S. Patent Publication No. 2012/0042476 to Karmatz ("Karmatz")
EX1005	International Patent Publication No. WO2011/107786 to

	Grieve (“Grieve”)
EX1006	U.S. Patent Publication No. 2015/0115112 to Noh (“Noh”)
EX1007	U.S. Patent Publication No. 2012/0068043 to Daigle <i>et al.</i> (“Daigle”)
EX1008	U.S. Patent No. 8,428,664 to Wyers (“Wyers”)
EX1009	U.S. Patent Publication No. 2012/0048873 to Hyseni (“Hyseni”)
EX1010	U.S. Patent Publication No. 2011/0047583 to Howard <i>et al.</i> (“Howard”)
EX1011	U.S. Patent Publication No. 2013/0166401 to Algozer <i>et al.</i> (“Algozer”)
EX1012	U.S. Patent No. 8,922,985 to Richardson <i>et al.</i> (“Richardson”)
EX1013	U.S. Patent Publication No. 2004/0226973 to Kao (“Kao”)
EX1014	U.S. Patent Publication No. 2013/0048809 to Jacobson (“Jacobson”)
EX1015	U.S. Patent Publication No. 2012/0104185 to Carroll (“Carroll”)
EX1016	U.S. Patent Publication No. 2012/0217030 to Johnson (“Johnson”)
EX1017	U.S. Patent No. 9,241,551 to Lawson <i>et al.</i> (“Lawson”)
EX1018	U.S. Patent No. 10,207,460 to Reznar (“Reznar”)
EX1019	ANSI/HFES 100-2007 – Human Factors Engineering of Computer Workstations (2007)
EX1020	Merriam-Webster (10 th Edition)

23. In addition to the documents above, in forming the opinions expressed below,

I have also considered:

a. My own knowledge and experience, as described in my CV; and

- b. The level of skill of a POSITA at the time of the alleged invention of the '691 Patent.

III. ANTICIPATION

24. I have been informed and understand that an anticipation analysis involves comparing a claim to the prior art to determine whether a person of ordinary skill in the art ("POSITA") would have understood the claimed invention is anticipated in view of the prior art, and in light of the general knowledge in the art. I understand that to anticipate a claim, a prior art reference must disclose each and every claim limitation, either expressly or inherently.

IV. OBVIOUSNESS

25. I have been informed and understand that a claim is obvious in light of the prior art if the difference or differences between the claimed subject matter and the prior art are such that the subject matter as a whole would have been obvious, at the time the invention was made, to a person having ordinary skill in the art. I have been informed and understand that the Supreme Court provided an outline for analyzing obviousness in which it rejected an earlier test in favor of an "expansive and flexible approach" using "common sense." I have also been informed and understand that the Supreme Court explained that under the correct analysis, 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. I have also been informed and understand that the Supreme Court explained that “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” I further have been informed and understand that the Court pointed to other factors that may show obviousness. These factors include the following principles:

- a. a combination that unites old elements with no change in their respective functions is unpatentable. As a result, the combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results,
- b. a predictable variation of a work in the same or a different field of endeavor is likely obvious if a person of ordinary skill would be able to implement the variation,
- c. an invention is obvious if it is the use of a known technique to improve a similar device in the same way, unless the actual application of the technique would have been beyond the skill of the person of ordinary skill in the art. In this case, a key inquiry is

whether the improvement is more than the predictable use of prior art elements according to their established functions,

- d. an invention is obvious if there existed at the time of invention a known problem for which there was an obvious solution encompassed by the patent's claims,
- e. inventions that were “obvious to try” — chosen from a finite number of identified, predictable solutions, with a reasonable expectation of success — are likely obvious,
- f. known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art, and
- g. an explicit teaching, suggestion, or motivation in the art to combine references, while not a requirement for a finding of obviousness, remains “a helpful insight” upon which a finding of obviousness may be based.

V. CLAIM CONSTRUCTION

Unitary

26. I have been informed and understand that, in an *inter partes* review, claim terms are construed according to their ordinary and customary meaning as understood by one of ordinary skill in the art in view of the specification and the prosecution history of the patent.
27. It is my opinion, having reviewed the '691 Patent and the prosecution history that resulted in the '691 Patent, that the term “**unitary**” requires construction. Though I provide a construction for this term, the invalidity of the claims of the '691 Patent is not dependent on the adoption of any particular construction. The prior art cited herein demonstrates the invalidity of each challenged claim under any reasonable construction of this term.

28. I understand that claim construction begins with intrinsic evidence.² With one exception, the term “unitary” always appears as part of the phrase “unitary finger support member.”³ EX1001, 11:34-12:66. However, the written description of the ’691 Patent does not define or otherwise include the term “unitary.” *Id.*, *passim*. Indeed, the word “unitary” does not appear in the ’691 Patent outside of the claims. *Id.* “Unitary” also did not appear in the initial claims of the application that matured into the ’691 Patent. EX1002, at p.124. It was added to several claims during prosecution to overcome a rejection over U.S. Patent Pub. 2012/0228346 to Huang. In making these amendments, the Applicant stated that, unlike the finger support member of purported invention of the ’691 Patent,

² See *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (“[t]he best source for understanding a technical term is the specification from which it arose, informed, as needed, by the prosecution history”).

³ In the final element of Claim 1 recites both a “unitary finger” and a “unitary finger support member.” EX1001, 11:44-50.

the finger support members of Huang involve *two separate entities* which pivot upwards and combine into a structure that is then situated between a user's fingers. Alternatively, claim 1, as amended, now recites that the finger support member is a *unitary structure* and thus *not comprised of two separate portions*.

Id., at 324 (10/2/2017 Remarks (emphasis added)); and see *id.* 366-367 (5/8/2018 Remarks) (“As discussed in Applicant's previous response, Huang has two distinct components, i.e. two movable brackets 2, each including a separate handle 21 and flange.”)

29. Turning to extrinsic evidence⁴, the distinction drawn by Applicant in attempting to distinguish Huang is consistent with definitions from contemporary dictionaries I reviewed. For example, the Meriam-Webster Collegiate Dictionary (10th) (2010) defines “unitary” as “of or relating to a

⁴ *Phillips v. AWH Corp.*, 415 F.3d 1303, 1317 (Fed. Cir. 2005) (“we have also authorized district courts to rely on extrinsic evidence, which “consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.”)

unit; based on or characterized by unity or unit; (2) having the character of a unit; *undivided, whole.*” EX1020 (emphasis added). In my opinion, Applicant’s statements are consistent with contemporary definitions.

30. It is therefore my opinion that, in the context of the intrinsic evidence of the ’691 Patent as confirmed by extrinsic evidence, “unitary” means “one-piece” or “single-piece” such that “unitary finger support member” means “one-piece finger support member” or “single-piece finger support member.” However, as noted, the invalidity of the claims of the ’691 Patent is not dependent on the adoption of any particular construction.

Substantially Flush/Closed Position

31. It is my opinion, having reviewed the ’691 Patent and the prosecution history that resulted in the ’691 Patent, that terms related to a “closed position” and “substantially flush” also require construction. Though I provide a construction for these terms, the invalidity of the claims of the ’691 Patent is not dependent on the adoption of any particular construction. The prior art cited herein demonstrates the invalidity of each challenged claim under any reasonable construction of these terms.

32. Beginning with the intrinsic evidence⁵, the specification of the '691 Patent provides guidance on the meaning of this term and the effect to which “substantially” impacts or would guide a POSITA’s understanding of the limitation. The specification, in its only substantive discussion regarding “substantially flush,” notes the following:

“References to a closed position of the device, to a closed position of the finger support member, to a closed position of the slidable element and to a position *in which the finger support member and its first and second ends are substantially flush with the base plate may be taken to mean [a] position[] in which the central portion and first and second ends of the finger support member are in contact with or in close proximity to the base plate.*”

EX1001, 7:8-15.

33. As in the language of the text, this explanation refers to three different terms:

⁵ See note 2.

Term	Meaning
a closed position of the device,	<i>position[] in which the central portion and first and second ends of the finger support member are in contact with or in close proximity to the base plate</i>
a closed position of the finger support member	
a closed position of the slidable element	
to a position in which the finger support member and its first and second ends are substantially flush with the base plate	

34. From reviewing the claims of the '691 Patent, relevant limitations appear in a few claims:

Term (EX1001, 7:8-15)	Limitation
a closed position of the device	See Claims 1, 9, 18, 20 (claims directed to “a stabilising device” as below)

Term (EX1001, 7:8-15)	Limitation
a closed position of the finger support member	Claim 18: “...to secure the unitary finger support member in the closed position when not in use.” Claim 20: “...when the finger support member is in the closed position”
a closed position of the slidable element	Claim 9: “.... the slidable element being slidable such that the unitary finger support member can move between the closed position and the open position.”

Term (EX1001, 7:8-15)	Limitation
a position in which the finger support member and its first and second ends are substantially flush with the base plate	Claim 1: “the unitary finger support member is moveable between a closed position in which the unitary finger support member is substantially flush with the base plate” Claim 20: “...the finger support member is moveable between a closed position in which the finger support member is substantially flush with the base plate”

35. For greater context and to confirm my opinions of a POSITA’s understanding of the above terms, I turn to extrinsic evidence, and in particular to confirm that Applicant’s explanation of “substantially flush” would be consistent with contemporary meaning. For example, the Meriam-Webster Collegiate Dictionary (10th) (2010) defines ‘substantially’ as “being largely but not

wholly that which is specified” and ‘flush’ as “directly abutting or immediately adjacent.” EX1020. In context, it is my understanding that a POSITA would understand the phrase to mean “being largely but not wholly butting or adjacent.” This is consistent with the explanation of the written description including “close proximity” with the base plate. A POSITA would understand “substantially flush” and the full terms above to mean the two elements were in “close proximity” to one another in a closed position, even if the structures were not directly adjacent to one another. In my opinion, these limitations mean a “position in which the central portion and first and second ends of the finger support member are in contact with or in close proximity to the base plate.” However, as noted, the invalidity of the claims of the ’691 Patent is not dependent on the adoption of any particular construction.

36. While I do not believe construction of any other terms is necessary to the disposition of Otter’s petition, I reserve the right to present further opinions as permitted or needed in connection with this petition, including if the Patent Owner contends that any other constructions are relevant.

VI. LEVEL OF SKILL IN THE ART

37. I have been informed that obviousness is considered from the perspective of a person of ordinary skill in the art at the time of the invention. I understand that several factors are considered in determining the level of ordinary skill in the art, including the educational level of active workers in the field, the types of problems encountered in the art, the nature of the prior art solutions to those problems, prior art patents and publications, the activities of others, the sophistication of the technology involved, and the rapidity of innovations in the field. I have been informed that the filing date of the PCT application to which the '691 Patent claims priority is **April 26, 2013**. As noted above, I was active as a designer of handles and grips, including with consideration to stability and ergonomic design, around and before the time of the claimed priority date.
38. In my opinion, a POSITA in the field of the '691 Patent, as of April 26, 2013, would have an undergraduate degree in mechanical engineering, industrial design or a similar degree, plus 1-3 years of experience designing consumer products and accessories for such products, including at least one year of experience in applying ergonomic principles in the design of consumer products. Alternatively, without an undergraduate degree, a POSITA would

have an additional 2 years of experience in the field. Such a designer would have at least a basic understanding of material sciences (*i.e.*, the differences and advantages behind using different materials during manufacturing), at least a basic understanding of manufacturing processes (*i.e.*, design concerns that will affect the ability to manufacture a product through different manufacturing processes and the techniques for same), and at least a basic understanding of ergonomics. However, and based on the strength of the references discussed herein, a similar or greater level of skill in the art would also render the claims unpatentable for the reasons set forth herein.

39. I met and exceeded the above qualifications for a POSITA as of at least April 26, 2013 (and thereafter) and consider myself to be a person with at least ordinary skill in the art of the '691 Patent. My experience as discussed above provides me with significant insight on the knowledge of a POSITA.

VII. BACKGROUND OF THE RELEVANT TECHNOLOGY

40. I provide the following background information on technology relevant to the '691 Patent based on my general knowledge and experience in the relevant arts.
41. The alleged invention of the '691 Patent relates generally to “a stabilising device for a portable computing device, to a display system comprising a

stabilising device and a portable computing device, and to the use of a stabilising device for holding a portable computing device.” EX1001, Col. 1:15-19.

42. Stabilizing devices for the claimed portable computing devices—including such features as handles, grips, and the like—were known in the art well before 2013. *E.g.*, EX1004 (Karmatz), EX1007 (Daigle). As noted by Karmatz in 2010, a POSITA would have known leading into the claimed priority date for the ’691 Patent that “the use of handheld electronic devices ... increased significantly.” EX1004, [0005]. This was particularly true of tablet computers, which POSITAs recognized as a distinct class of electronic device from, for example, desktop and laptop computers⁶ on one end, and

⁶ *E.g.*, EX1013 (Kao), at [0002] (in 2003, stating “The tablet PC has been quickly developed and become as popular as the desktop and the laptop computer.”)

smart phones and other small devices on the other.⁷ At the time, a POSITA would have understood that tablet computers implicated concerns distinct from larger laptop computers (and certainly from desktop computers) which would typically not be used while held, and likewise from “smart” phones that would be lighter and easier to control and safely use. Indeed, the art before 2013 observed and appreciated that “small music players or smart phones” presented different considerations than the “relatively large and heavy tablet PC of the types that predominate in the market today [2011].” EX1009, [0004].⁸

⁷ See EX1009, [0004] (noting market push for “hybrid computer phones, such as Blackberry™ and iPhone™” and separately noting “[t]here is also now a market push for relatively flat computers, such as the iPad™.”) *and id.* (“For larger computers and computerized tablets (like an iPad™), a holster device is impractical and the computer (and its case) are typically carried under-arm”).

⁸ To be clear, the considerations relevant to tablet computers do not implicate or otherwise effect my opinions in this declaration.

43. Attendant to the market trends reflected in the increased popularity of these devices, practitioners turned their attention to developing accessories. One resulting and central design pressure and incentive was a heightened concern with dropping tablet computers, even when merely being held. In the years leading up to the claimed priority date, practitioners like myself were working to address these concerns over stability and use of the devices (including with attention to ergonomic issues from prolonged use of tablets).
44. In designing accessories for such tablet computers in and before 2013, a POSITA would have been aware of the typical use-cases implicated and the resulting design considerations. For example, several such design considerations are readily apparent in the knowledge of POSITA and as shown through references cited in this declaration. For example, and focusing on considerations relevant to my opinions below:
- a. **Protective cases/sleeves/enclosures:** It was well known in and before 2013 that consumers would (in view of stability concerns and fears of dropping the device) sometimes enclose their tablet computers within a protective case, sleeve, enclosure, etc. U.S. Patent No. 8,599,547 to Richardson et al. (which I note is assigned to Petitioner Otter Products, LLC, and issued from an application

filed September 16, 2009 with claimed priority to November 19, 2001) highlights such efforts. Richardson discloses a “protective enclosure [] that encloses and protects a tablet PC[],” including features such as cushions that “protects [the tablet PC] against breakage if the enclosure and tablet PC are dropped or otherwise subjected to shock.” EX1012, 11:33-36. As seen through the repeated teachings of the prior art, addressing concerns centered on or arising from lack of stability, including potentially losing control of and dropping the device, was a common and frequent goal in the prior art.⁹

⁹ EX1004 (Karmatz), [0029] (“The base 110 may also be integrated into a removable protective case, clip-on, or slide-on attachment/accessory for the handheld device 140.”); EX1009 (Hyseni), [0004] (“When so carried or handled, these devices are prone to be dropped and damaged.”); EX1015 (Carroll), [0005] (“Moreover, when gripping such devices is awkward, users are more prone to drop

As a result of these market trends and resulting design pressure, a POSITA designing any stabilising device for the described portable computing device would be motivated to implement a design for the stabilising device that could be deployed for both known use-cases (i.e., whether or not the described portable computing device was in a protective case). Such compatibility would be expected and driven based on the market trends, and would reflect the mere application of a known technique to improve a similar use case (i.e., merely attaching the grip to a different surface).

and damage them.”) and [0043] (“by providing a stable and secure grip for holding the portable computing device 108, the portable computer holder 100 of the present invention also greatly reduces the likelihood of dropping”).

b. **Grips/Handles/Holds/Stabilising Devices**¹⁰: Whether a portable computing devices described by the '691 Patent was enclosed in a protective case or used “naked,” the stability and ergonomic considerations surrounding use of such devices for prolonged periods of time was well-known in the art by 2013. Tablet computers were known to be heavier than the smart phones that had become popular earlier in the 2000s, including as concerned solutions to secure or mount (and thereby stabilise) tablet

¹⁰ As noted elsewhere, in my opinion there is no appreciable difference between the nomenclature given to the solutions described in the prior art references used as grounds for this declaration. That is, a POSITA would have looked to solutions described as, among others, “grips,” “handles,” “holds,” “holders,” “stabilising devices,” and so on with an understanding that each such term described solutions for holding/gripping/handling/stabilising a device, and would teach methods to securely hold (stabilise) an object and teach improved ergonomics for same. I use these terms interchangeably in this declaration.

computers, and implicating an increased need to stabilise and avoid dropping the device.

U.S. Patent Publication No. 2012/0068043 to Daigle confirms my understanding and recollection of the art before 2013. Specifically, Daigle disclosed that its “holder system” could be used for a range of objects, including explicitly “an electronic device, such as a tablet” and additionally applicable to other “electronic and non-electronic devices, such as a clipboard, a blackboard, an artist palette, a tray, etc.” EX1007, Abstract and ¶57. In and before 2013, it was known in the art to consider (and apply solutions to) solutions directed to stabilising devices¹¹ across use-cases, including as relevant here solutions directed to tablets and hospitality trays.

¹¹ 1014, [0005] (“Prior art mounting apparatuses are too fragile for, too unstable for, and fundamentally incompatible with tablet PCs and related PPCs.”) *and* [0008] (in patent claiming mounting system for tablet computer, distinguishing

c. **Ergonomic Elements:** Given the developed focus in the art on providing stabilising and/or ergonomic grips for use of the described portable computing devices, the knowledge in the art in the field of ergonomics is also important. In and before 2013 (indeed, long before) it was well-known in the art to round or curve the edges of grips, handles, and the like, in order to provide a more comfortable grip for users. For example, in U.S. Patent Publication No. 2012/0217030 to Johnson (“Johnson”) includes teachings directed to making a grip for a cultivator more comfortable. Johnson explains that “[t]he edges of the handle are rounded for a comfortable grip.” EX1016, at [0054]. Johnson expands, however, on the benefits for these kinds of ergonomic features, noting that “[t]he ergonomic design lessens fatigue. For example, the square handle with eased edges is comfortable to grip and provides positive rotational control

prior art through argument that a device “suitable for holding small music players or smart phones, [could not] be reliably used for mounting a relatively large and heavy tablet PC of the types that predominate in the marketplace today[.]”)

with a lighter grip when compared to a round handle.” *Id.*, [0083].

The art is replete with other similar teachings.

The American National Standards Institute (“ANSI”) promulgated standards before 2013 reinforcing and confirming this expectation and knowledge of the art. In the 2007 standard for Human Factors Engineering of Computer Workstations (ANSI/HFES 100-2007), which in my view informs the knowledge that would be within the knowledge of the POSITA in this case, ANSI repeatedly provided that a designer should round off the edges of an accessory that comes into contact with the user. For example, at section 6.2.1.7 (“Edges, Corners, and Surfaces”), the standards explain that:

Hard surface edges and corners that come into contact with the user during normal operation should[] Have a radius of at least 2 mm (0.078 in.)... Prolonged or frequent pressure and contact with sharp edges and corners can lead to discomfort, distraction, and degraded performance."

EX1019, p.36.

Section 8.3.1.4, which is specifically directed to accessories, echoes the same instruction and provides “It is good ergonomic

practice to avoid potential postural hazards or discomfort to users posed by sharp corners and edges on furniture surfaces. This may be accomplished by providing edges and corners with the largest radii possible.” EX1019, p.78.

The benefits of such ergonomic elements (including here, including curved edges at points of contact or engagement by the user rather than an orthogonal edge) was thus both common sense – people do not like to have a sharp edge pressing into their finger or hand while holding something – and an explicit practice within the art. As confirmed by my review of the art, and further based on my experience as a practitioner, including such curved elements was both well-known in the art and an expectation of any practitioner.

- d. **Rotatability:** Another market trend and resulting design pressure seen in the increased popularity of the described portable computing devices, was the functionality of tablet computers to be viewed in

both landscape and portrait mode.¹² Specifically, it was well-known in the art that tablet devices could and would be used both orientations by consumers.

As a result of POSITA's knowledge of this functionality and the implications, there was a design pressure and knowledge in the art that grips (generally; *see* Paragraph 44.b, above) should be rotatable

¹² *E.g.*, EX1009, [0005] (“Another market trend in these portable devices is that they now offer screen displays and keyboards that can alternate between a relatively vertical and relatively horizontal configuration.”); *and see* EX1007, [0058] (handle and cover assembly for tablet et al., “A central rotatable mounting assembly or rotatable mount is generally indicated at 16, and spaced-apart auxiliary mounts are indicated at 18, 20, 22, and 24.”).

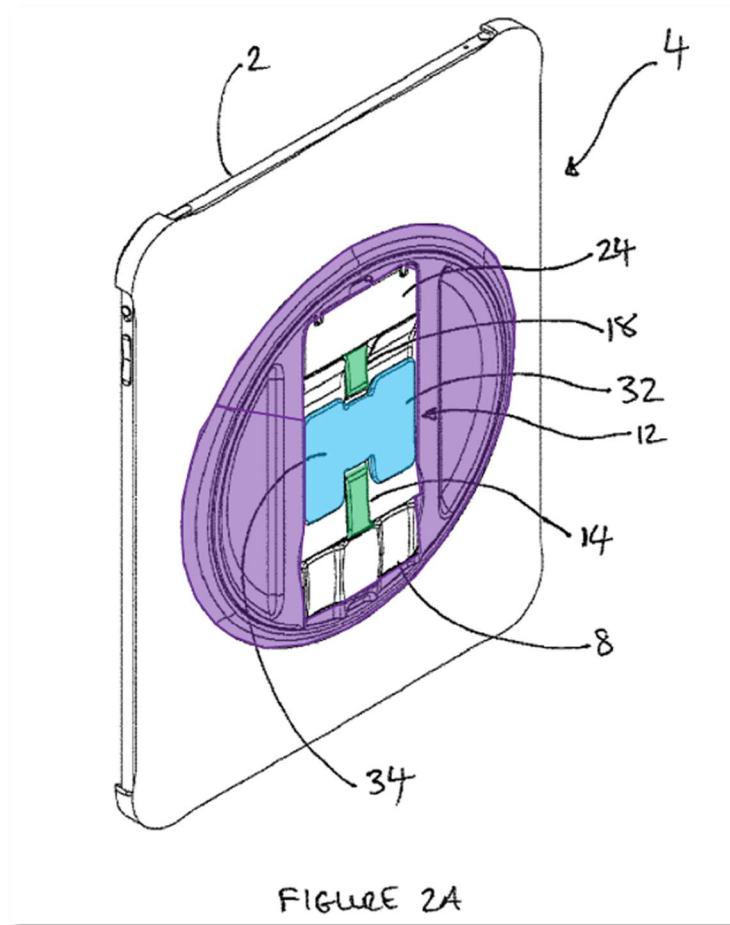
or permit rotatability in order to accommodate the rotation expected by and required for the typical use of tablet computers.¹³

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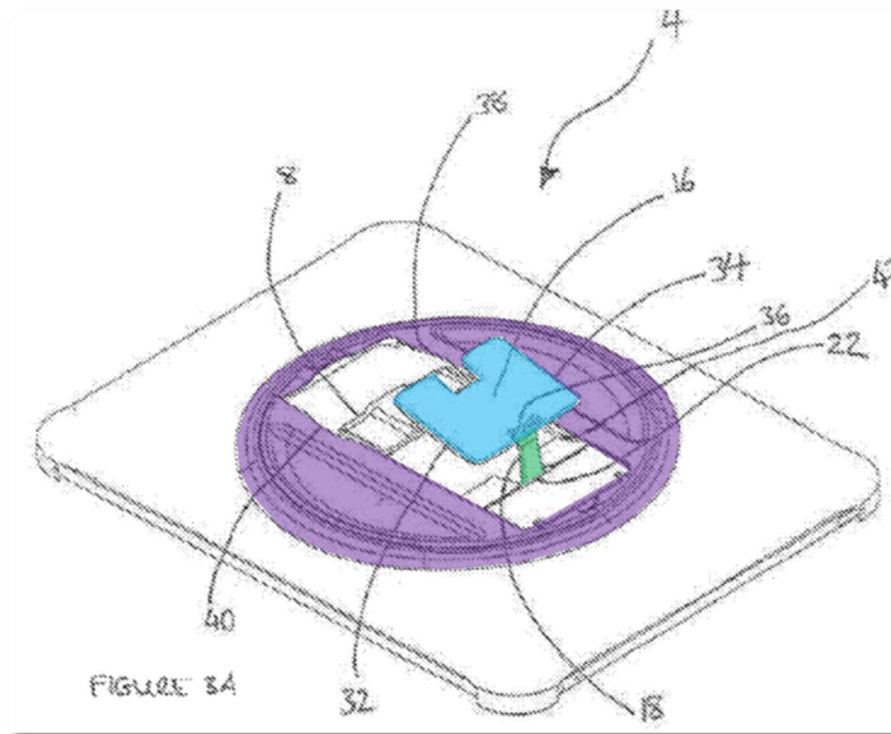
45. I have been informed and understand that the earliest priority date to which the Patent Owner may claim the '691 Patent is entitled is April 26, 2013. For purposes of my analysis herein, I am assuming that the '691 is entitled to this priority date. I understand that all of the references discussed below qualify as prior art based on this assumed priority date of April 26, 2013.

¹³ See EX1004, [0036] (“according to an embodiment of the present invention, the grip device may rotate and/or be re-attached or repositioned with respect to the handheld device 140 such that the handheld device 140 may rest in a portrait and/or landscape orientation.”); EX1007, [0059] (“Because the handle is mounted so that it can rotate about an axis generally perpendicular to the plane of the cover and electronic device, a person can grip or hold onto the handle with one hand and rotate the electronic device or tablet with the other hand thereby moving the electronic device as desired, into the portrait or landscape positions.”)

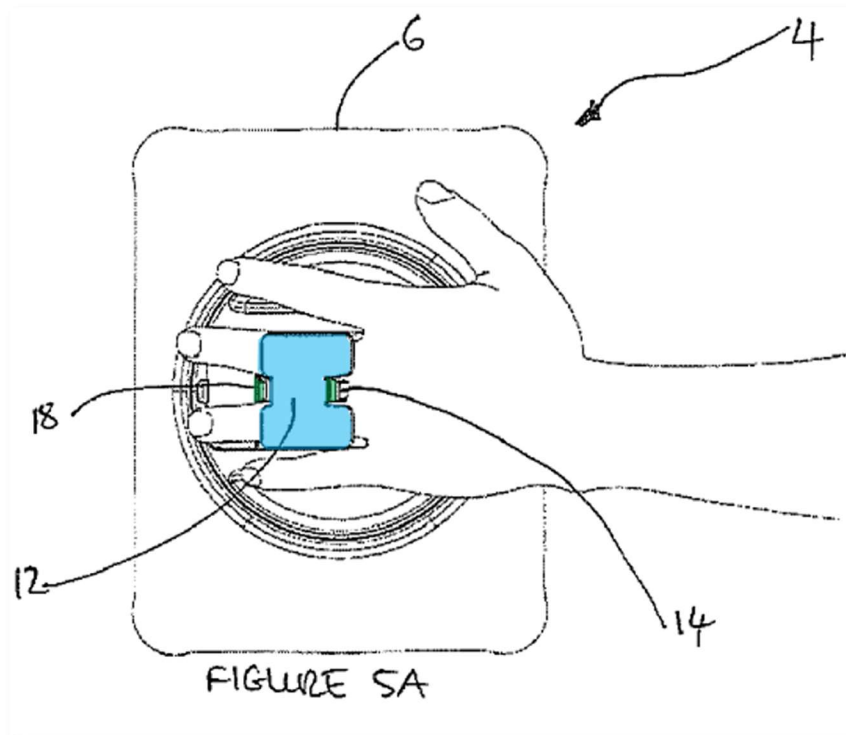
46. The '691 Patent purports to describe a stabilising device for a portable computer device. EX1001. The device described therein purports to “allow[] a user to effectively hold and support a portable computing device in one hand, and react against the rotational forces which are exerted when, with his or her other hand, the user rotates the portable computing device from one orientation to the other[.]” *Id.* at 6:55-59; *and see id.* 1:44-50 (describing prior art as bulky and not able to “efficiently resist a rotational force” as a deficiency to be solved in the art). Figure 2A of the '691 Patent depicts such a device in a closed position.



Id. at Fig. 2A. As shown in Figure 2A, portable computing device 2 is in communication with stabilising device 4, which includes **base plate** 10 (unnumbered, *see* Figure 1) and a **finger support member** 12 with **first and second spacer elements** 14, 18, and first and second ends 32, 34. *Id.*, 9:42-59. Also part of the stabilising device 4 are connecting plate 24 and slidable portion 8, which, when slid in the direction of connecting plate 24, forces the stabilising device 4 into an open position. Figure 3A shows a stabilising device 4 in an open position. *Id.* at Col. 9:60-10:7.



Id., Fig. 3A. In Figure 3A, the slidable portion has been slid towards connecting plate 24 (not labeled in Figure 3A). In response to this, pivots 22 and 36 at the ends of **spacer element** 18 (and corresponding pivots at the ends of **spacer element** 14, now hidden), lifting the **finger support member** 12 from the underlying rotatable base plate (unlabeled), which allows a user to place fingers between the base plate and the **finger support member** 12 as shown in, for instance, Figure 5A.



Id. at Figure 5A. As illustrated in Figure 5A, a pair of fingers slide either side of the **spacer elements** 14 and 18 in the depicted embodiment (here, the middle and ring finger).

47. The '691 Patent has 20 Claims. Of those, Claims 1 and 20 are independent.

Claim 1 recites:

1. A stabilising device for a portable computing device, the stabilising device comprising:
 - a base plate configured to be mounted on the portable computing device and rotatable relative to the portable computing device;
 - a unitary finger support member;
 - a first spacer element connected to the unitary finger support member and to the base plate; and

a second spacer element connected to the unitary finger support member and to the base plate;
wherein, the unitary finger support member is moveable between a closed position in which the unitary finger support member is substantially flush with the base plate and an open position in which the unitary finger support member is spaced from the base plate such that a user can insert at least one unitary finger between the base plate and the unitary finger support member.

EX1002EX1001, Col. 11:34-50. Claim 20 recites:

20. A stabilising device for a portable computing device, the stabilising device comprising:
a base plate configured to be mounted on the portable computing device and rotatable relative to the portable computing device;
a finger support member having a first side and a second side;
a first spacer element connected to the first side of the finger support member and to the base plate; and
a second spacer element connected to the second side of the finger support member and to the base plate;
wherein, the finger support member is moveable between a closed position in which the finger support member is substantially flush with the base plate and an open position in which the finger support member is spaced from the base plate such that a user can insert at least one finger between the base plate and the finger support member; and
wherein the base plate is rotatable when the finger support member is in the closed position.

Id., Col. 12:46-66.

In sum, the '691 Patent is directed to devices and methods for stabilising a portable computing device. EX1001, ¶¶15-11.

48. The application that resulted in the '691 Patent (U.S. Patent Application No. 14/786,589; the "'589 Application") was filed on October 23, 2015, and issued on October 30, 2018. EX1001. The '589 Application claims priority to Great Britain Application No. 1307605.4, filed on April 26, 2013, through PCT Application No. PCT/GB/051307, filed on April 25, 2014. *Id.*
49. After a preliminary amendment to remove multiple dependencies, EX1002 at 198, the Office issued a first Office Action on May 2, 2016, *id.* at 214 *et seq.*, which included rejections of many claims based on U.S. Patent Publication No. 2012/0228346 to Huang ("Huang") alone, in combination with U.S. Patent No. 8,794,686 to Grieve ("Grieve '686"), or in combination with Grieve '686 and U.S. Patent Publication No. 2015/0115112 to Noh ("Noh"). *Id.* at 216-219.
50. Applicant filed an amendment in response to that Office Action. *Id.* at 242. In its response, Applicant did not amend any claims but argued that Huang does not teach or suggest the **"spacer element"** and **"finger support member"** limitations of Claim 1. *Id.* p.245. Applicant further argued that incorporating the teachings of Grieve '686 into Huang would require a significant redesign

and that Grieve '686 thus did not remedy the purported deficiencies of Huang. *Id.* at 246. Applicant also argued that Grieve '686 is not analogous art because it is directed towards drinks trays in the hospitality industry. *Id.* at 246-247.

51. On December 27, 2016, following Applicant's responsive arguments, the Office issued an Office Action that largely mirrored the prior non-final rejection, finally rejecting all pending claims under 35 U.S.C. §§ 102 or 103 in view of combinations of Huang, Grieve '686, and Noh. *Id.* at 253, 255-258. In response, Applicant filed a request for continued examination and amended its claims, incorporating a limitation into pending Claim 1 explicitly requiring **“a second spacer element connected to the finger support member and to the base plate[,]”** which Applicant argued was lacking from the cited references. *Id.* at 276, 280 et seq.
52. The Office issued another Office Action, including a non-final rejection of all pending claims, on May 3, 2017. *Id.* at 291. The Examiner also indicated that Applicant's prior arguments in view of Applicant's prior amendment were unpersuasive, as the arguments were based on features of Applicant's alleged invention that did not appear in the claims. *Id.* at 299. After an interview with the Examiner, Applicant again amended its claims. *Id.* at 316, 317.

53. The Office finally rejected all pending claims in another Office Action, dated December 8, 2017, maintaining that all pending claims were obvious under 35 U.S.C. § 103 over Huang in view of Grieve '686 or Huang in view of Grieve '686 and Noh. *Id.* at 336, 338-343. Applicant thus filed a Request for Consideration After Final Consideration and argued that Huang taught away from combination with Grieve '686 to result in claimed invention while also maintaining its position that Grieve was non-analogous art. *Id.* at 358, 365. Applicant also argued that Huang and Grieve '686 had different “physiological effects on a user [that] are profoundly different to each other.” *Id.* at 369. Thereafter, the '691 Patent issued on October 10, 2018. *Id.* at 420.

IX. ANALYSIS AND IDENTIFICATION OF HOW THE CLAIMS ARE UNPATENTABLE.

A. Ground 1: Karmatz anticipates and/or renders obvious Claims 1-18 and 20.

54. Based on the following, it is my opinion that:

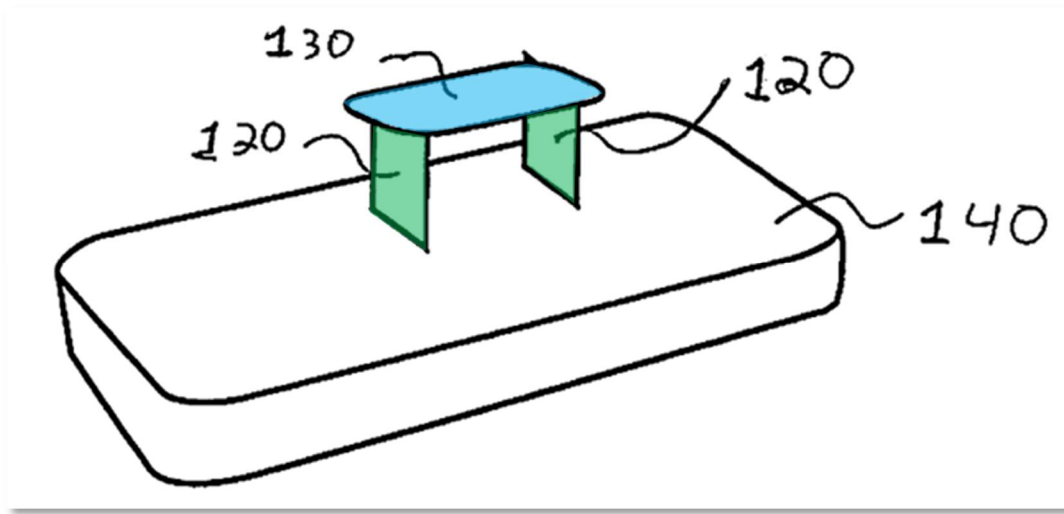
- a. Karmatz anticipates claims 1 through 8, 12 through 16, 18, and 20;
- b. Karmatz renders obvious claims 1 through 18 and 20;
- c. Karmatz in view of Grieve renders obvious claims 14, 15, and 17;
and
- d. Karmatz in view of Noh renders obvious claim 19,

as of April 26, 2013.

Overview of Karmatz

55. Karmatz is entitled “APPARATUS FOR GRIPPING HANDHELD DEVICES.” EX1004, cover. It teaches a device used for gripping a handheld device that provides increased stability while increasing the range of motion of a user’s thumb to interact with the front of the device. *Id.*, [0011]. Karmatz is directed for use with a number of electronic devices, including at least tablet computers. EX1004, [0027]. Figure 23, which includes two extensions and a unitary grip like the ’691 Patent, and along with Figures 24 and 25 and related and general teachings, is exemplary. *And see* EX1004, [0022].
56. Specifically, Karmatz discloses a **base**¹⁴, one or more **extensions**, and a **grip**. EX1004, [0026], [0027], [0047]. Figure 23 of Karmatz is illustrative:

¹⁴ For clarity, this declaration correlates textual descriptions with figure annotations through use of the same colors.



EX1004, Figure 23. Karmatz further provides that that Figure 23 includes but does not illustrate **base** 110. *See* [0047] (“Referring to FIGS. 23 to 25, a grip device according to an embodiment of the present invention may include a plurality of extensions 120 connecting a **base** 110[.]”).

57. Karmatz is from the same field of endeavor as the '691 Patent, namely, **increasing the stability of an object being held**. I understand that “it is necessary to consider ‘the reality of the circumstances’—in other words, *common sense*—in deciding in which fields a person of ordinary skill would reasonably be expected to look for a solution to the problem facing the inventor.” *In re Bigio*, 381 F.3d 1320, 1326 (Fed. Cir. 2004) (quoting *In re Oetiker*, 977 F.2d 1443, 1447 (Fed. Cir. 1992)) (emphasis in original).

58. Karmatz is alternatively and additionally analogous art to the claimed invention, because it is reasonably (indeed, explicitly) pertinent to the same issues purportedly addressed by the '691 Patent: **improving stability and ergonomics of an object being held**. EX1004, [0010], [0029], [0032], [0047]. I understand that a reference is reasonably pertinent to the subject matter of an asserted patent if “a person of ordinary skill would have consulted it and applied its teachings when faced with the problem that the inventor was trying to solve.” The '691 Patent states that “it can be unwieldy to manipulate and rotate [a] portable computing device and there exists a risk that the user may fumble the portable computing device, lose control of it and drop it[,]” and complains that the issue with known “protective cases [,] rigid carry handles, grips or straps for holding these devices” was that they “do not allow a user to efficiently resist a rotational force applied to the portable computing device.” EX1001, 1:36-40, 1:44-46. Karmatz discloses teachings directed to each of these problems. *E.g.*, EX1004, [0006] and [0010] (observing that prior art “may create difficulty for users to securely grip these [electronic] devices with a single hand, which results in users frequently dropping and damaging their devices” and disclosing solution for securely holding devices);

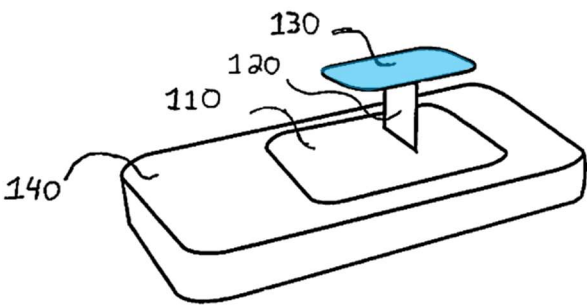
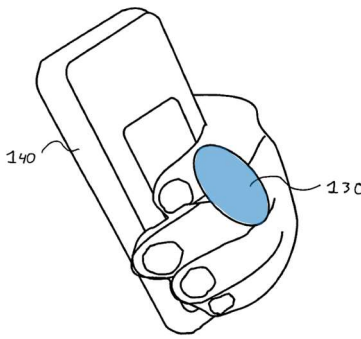
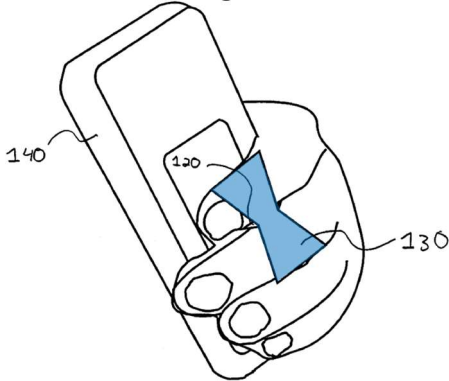
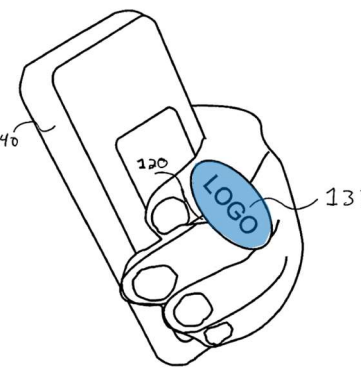
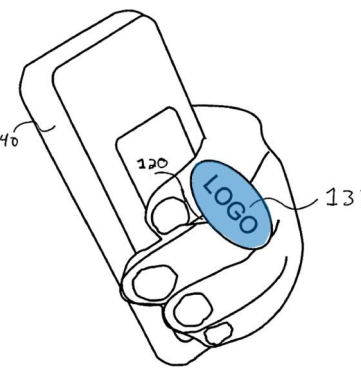
id. Figs. 23 to 25 (disclosing an embodiment that folds flat against handheld device when not in use).

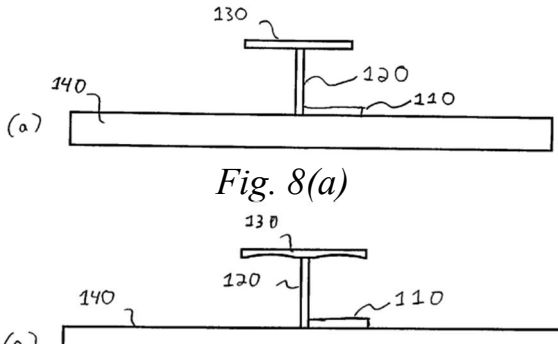
59. In summation, the problem described by the '691 Patent was that known grips capable of stabilising and controlling the subject objects did not sufficiently permit **resistance to a rotational force**. Karmatz, for its part, teaches a replacement for the criticized “rigid” and bulky handles and provides a device which can be held securely and control torque (i.e., a rotational force). In my opinion, Karmatz is reasonably pertinent to the issue addressed by the '691 Patent, and is analogous art.

Motivation to Modify Karmatz

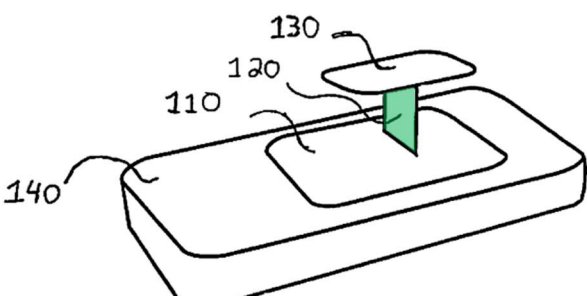
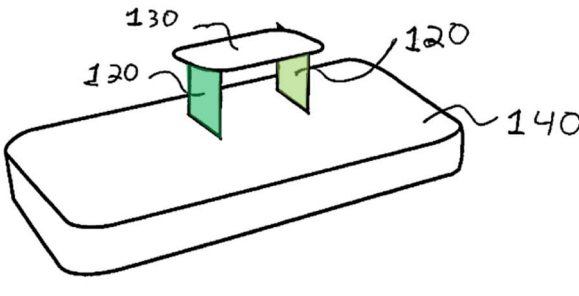
60. Karmatz describes its “grip device” as including (1) at least one extension, connecting (2) a base, to (3) a grip. EX1004, Abstract.
61. For example, Karmatz illustrates teachings through Figures 2, with permutations as to the grip 130 disclosed at Figures 4, 5, 6, 7, and 8 that incorporate a different grip device to the embodiment of Figure 2. *See* EX1004, [0032] (“Although the grip 130 illustrated in FIG. 2, for example, has a rectangular shape, various other shapes, such as a circle, ellipse, or other regular or irregular shapes, including ergonomic shapes designed to comfortably fit over a user’s fingers, may be used in accordance with

embodiments of the present invention, such as illustrated in FIGS. 4, 5, and 6.”). *And compare* EX1004, Fig. 2, *with id.*, Figs. 4, 5, 6, 7, and 8 (annotating variations of grip 130 [**dark blue**] compared to Fig. 2 [**blue**]):

EX1004	EX1004
<i>Fig. 2</i>  Labels: 140, 110, 120, 130	<i>Fig. 4</i>  Labels: 140, 130 <i>Fig. 5</i>  Labels: 140, 130 <i>Fig. 6</i>  Labels: 140, 130 <i>Fig. 7(a)</i>  Labels: 140, 130, Logo

EX1004	EX1004
	 Fig. 8(a)

62. Figures 23 through 25 and accompanying text depict a **second extension 120** in addition to the **extension 120** of Figure 2. Compare EX1004, Fig. 2 with EX1004, Fig. 23:

EX1004	EX1004
Fig. 2 	Fig. 23 

63. A person of ordinary skill in the art would readily understand that the addition of a second extension 120 would not preclude and would, at most, require *de minimis* modifications to the embodiments of Figures 2, 4, 6, 7, 8, 9, and 10 (among others) well within the skill in the art. I will explain this in more detail for the pertinent modifications, below.

64. While the foregoing illustrations provide variations on the grip device Figure 2—as to the grip 130 used, in Figures 4, 5, 6, 7, and 8; and as to an additional extension 120 in Figure 23—they do not suggest or implicate any separate teachings or required forms for base 110. *See* EX1004, [0017] (“FIGS. 4 to 8 are diagrams illustrating grip devices with various grip configurations according to other embodiments of the present invention”) and [0032] (Figs. 4, 5, and 6); *id.* [0022] (“FIGS. 23 to 25 are diagrams illustrating a grip device with two extensions according to another embodiment of the present invention”) and [0046]-[0047] (Figs. 23 through 25).¹⁵
65. Karmatz expressly teaches that “the specific embodiments of each component described [in its disclosure] are provided as examples, and the present
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¹⁵ I note Figures 7(b) and 8(b), in further comparison to Figures 7(c) and 8(c), disclose a confirmation wherein the entire grip device rests either on top of a handheld device (Figs. 7(b) and 8(b)) or in a recess within the handheld device (Figs. 7(c) and 8(c)). *See* EX1004, [0036]. Based on this description, in my opinion a person of skill would not understand the teachings for these figures to restrict the configuration of base 110.

invention is not limited to only these embodiments.” EX1004, [0052]. Consistent with same, Karmatz explains that the bases, extensions, and grips for each embodiment could (and should) be combined with the bases, extensions, and grips of other illustrated embodiments. *Id.* (“bases, extensions, and grips within grip devices of any of the described embodiments may be interchanged with other bases, extensions, and grips in accordance with other embodiments of the invention, and may be used in conjunction with any of a variety of handheld devices including the handheld devices described and illustrated herein.”).

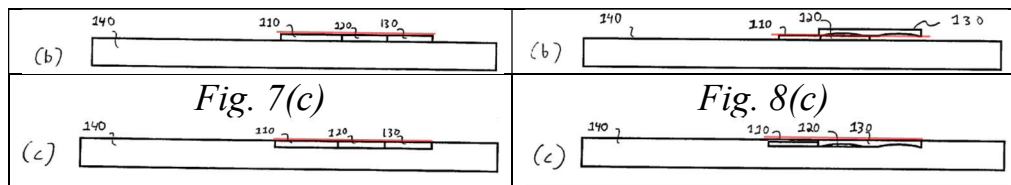
66. Based on Karmatz’s invitation and suggestion to combine, and further based on the foregoing discussion, in my opinion a POSITA would be aware of and motivated to modify any discrete embodiments disclosed by Karmatz through incorporation of the teachings of other embodiments, or to combine any discrete embodiments.
67. For example, in my opinion and to the extent not expressly or inherently disclosed, a POSITA would:
 - a. Modify Karmatz, including as depicted and described for Figure 23 and related or general teachings, to further include or amplify teachings discussed in connection with Figure 2, such that “[t]he

base 110 may be formed as a plate or other shape, removably or permanently affixed to the [handheld] by an adhesive” or integrated into a “protective case[.]” EX1004, [0029] (emphasis added); Paragraph 44.a. Such a modification, if not expressly or inherently disclosed, would be obvious to try based on Karmatz’s instruction and motivated as a technique to accomplish the gating purpose of Karmatz (i.e., a grip device with “a base for affixing the apparatus to a first surface of the handheld device”, *see* EX1004, at Abstract) in order to permit a user to stabilise and securely hold a handheld device. *Id.* [0010], [0012] (“The apparatus includes a base for affixing the apparatus to a first surface of the handheld device”). Incorporation into a protective case would be obvious to try for a POSITA based on Karmatz’s teaching of a goal to avoid damaging the device through drops and in order to provide additional protection to the handheld device (consistent with Karmatz’s aim of securing the handheld device from damage, *see* EX1004, [0006], [0011]). *And see* Ground 1, Claim 1f and Ground 1b, Claim 19, below.

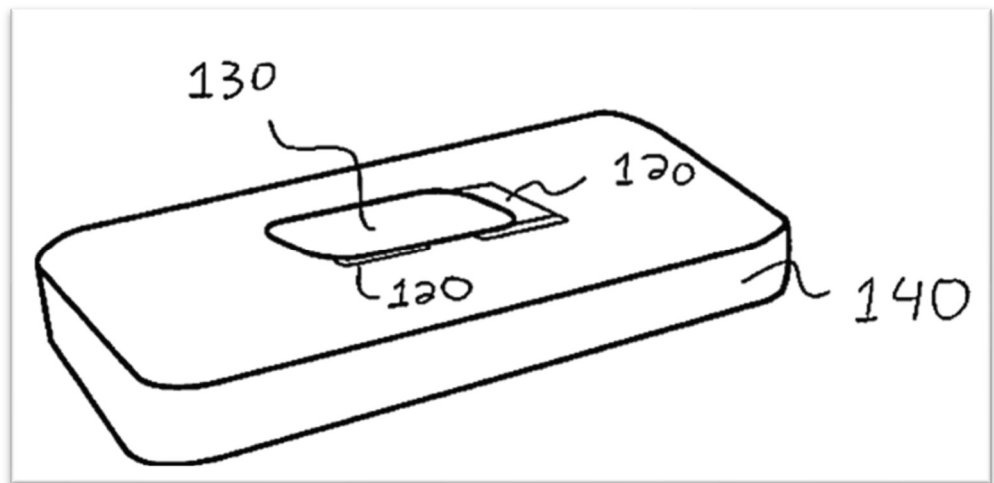
b. Modify the embodiment of Karmatz, including as depicted and described for Figure 23 and related or general teachings, to further include or amplify teachings discussed in connection with Figure 9 and 10 regarding **rotatability** of the grip device. *And see* Paragraph 44.d. Such a modification, if not expressly or inherently disclosed, could include incorporation of the teaching that “the grip device may rotate ... such that the handheld device 140 may rest in a portrait and/or landscape orientation[,]” (EX1004, [0035]). This modification would be obvious to try based on Karmatz’s instruction and recognition that the invention as a whole may be applied to “rotating” devices, and motivated by the need to ensure a user’s full use of the device. *Id.* [0028]; *and see id.* [0035] (“the grip device may rotate and/or be re-attached or repositioned with respect to the handheld device 140 such that the handheld device 140 may rest in a portrait and/or landscape orientation.”) and [0051] (full access to screen of device without need to reposition device important to ensuring secure one-handed operation); *And see* Paragraph 44.d. *And see* Ground 1, Claim 1(a), Claim 4, Claim 20, below.

c. Another modification, if not expressly or inherently disclosed by Figure 23 and its related and general teachings, could include further modification of Karmatz to further include or amplify teachings discussed in connection with Figure 7 and 8 for creating a **flat profile** when the grip device is in a closed position. Specifically, and consistent with and amplifying the disclosure for the embodiment of Figures 23 and 25 that the grip device folds flat against the base 110 (*see below*), the embodiments of 7 and 8 illustrate and explain that the grip device folds such as to rest on top of the handheld device (Figs. 7(b) and 8(b)) or where the upper surface of the grip device is substantially coplanar with an adjacent surface of the handheld device (Figs. 7(c) and 8(c)). EX1004, [0036]. As seen below, the resulting configuration places the grip 130 completely level and even with the base 110 in the closed position. In both configurations (on top or recessed), the teachings of Figures 7 and 8 inform a configuration where the grip 130 is substantially flush with the base plate (or in ‘close proximity,’ see red annotation, below):

EX1004	
<i>Fig. 7(b)</i>	<i>Fig. 8(b)</i>



To the extent not otherwise disclosed, this modification would be obvious to try based on Karmatz's instruction (EX1004, [0052]) in keeping with Karmatz's teachings and improving the flat profile of the embodiment of Figure 23:



EX1004, Fig. 24, and *id.* [0022] (Figure 24 is illustration of embodiment of Figure 23).

- d. Another modification, if not expressly or inherently disclosed by the Karmatz, including through Figure 23 and its related and general teachings, could include modification of Karmatz to further implement or amplify teachings for the manufacture of the grip

device as a **single piece**. Karmatz informs that “the entire grip device may be manufactured as a single piece.... In a case where the grip device is manufactures as a single piece, thickness of the material may vary in order for the grip device to be more flexible between the extension 120 and either of the base 110 and the grip 130 than the thickness of material in remainder of the grip device, in order to allow the grip device to move from an open position in which a user grips the handheld device 140 into a closed position for storage.” EX1004, [0033].

A person of ordinary skill would, in my opinion and consistent with my own experience designing consumer products, be well familiar with and motivated to deploy such a method for integrally forming the grip device (e.g., by injection molding) based on the simplicity of the components, the known efficiencies, and the anticipated cost savings incorporated by these techniques, and would further understand that the benefits of these disclosures would be equally applicable to (and readily deployed to) the embodiment of Figure 23. Paragraph 13. The resulting manufacture of Figure 23, including use of varied thickness to permit flexibility

(referred to as a “living hinge” in the art) between the extensions 120 and both the base 110 and grip 130, would permit those regions to flex and pivot in order to close the grip device. *And see* EX1004, [0033] (confirming use of thinner material between extension 120 and both base 110 and grip 130). Implementation of this technique would therefore be in keeping with and motivated by Karmatz’s explanations and illustrations of the embodiment of Figure 23, which requires the grip 130 to extend from a closed position (e.g., Figure 25) to an open position (e.g., Figure 24). *And* EX1004, [0047].

Claim 1

Claim Element 1p

[1p] A stabilising device for a portable computing device, the stabilising device comprising:

68. Karmatz discloses a stabilising device for a portable computing device, as that term is used in the ’691 Patent.
69. I understand that (in general), a preamble is “not limiting ‘where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention.’ *Shoes by*

Firebug LLC v. Stride Rite Children's Grp., LLC, 962 F.3d 1362, 1367 (Fed. Cir. 2020) (quoting *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002)). Here, it is my understanding that Petitioner has not proposed a construction for ‘stabilising device.’ I note, however, that the ’691 Patent uses the British English spelling of “stabilizing.” For clarity, I adopt the ’691 Patent’s spelling, and in my opinion a POSITA would understand the two spellings (‘stabilising’ and ‘stabilizing’) to have identical meanings.

70. I further note that ‘stabilising device’ is not used outside the preamble of the independent claims (and the prefatory text of each dependent claim), rather than introducing antecedent basis used in the limitations. *Shoes by Firebug*, 962 F.3d at 1367 (where claim body defines “a structurally complete invention”, statement of purpose or intended use in preamble not limiting); *and cf. id.* (“dependence on a particular disputed preamble phrase for antecedent basis may limit claim scope because it indicates a reliance on both the preamble and claim body to define the claimed invention.”) (quoting *Catalina Mktg.*, 289 F.3d at 808)). There are no limitations in the body of the claims that expressly requires “stability” or use of the identified ‘stabilising device’ in any particular orientation or through use of a particular grip.

71. Notwithstanding the foregoing in with an aim of completeness, I have considered whether Karmatz teaches a ‘stabilising device.’ Based on that analysis, and assuming ‘stabilising device’ is a limitation on the scope of the claims of the ‘691 Patent, Karmatz discloses any such limitation. Broadly speaking, devices or structures would be used for improving the stability and ergonomics of a device held at the back. For example: grips, handles, straps, grasps, and so on. As to Karmatz, the “grip device” serves the purpose of stabilising a handheld device (e.g., a tablet), because the grip is used (and indeed, intended) to give a user an improved ability to hold and stabilise an object so that it is not dropped.
72. Further, to the extent the Patent Owner argues an “ergonomic” improvement is incorporated as a limitation on ‘stabilising device,’ repositioning the grip to be closer to the center of gravity can help alleviate muscle fatigue. There are a variety of ways a POSITA might approach this, such as through the use of protruding surfaces or ridges that apply gravity to the top of a finger of hand, hand or finger loops, finger grooves, or extending surfaces that similarly spread the forces of gravity to other areas and reduce muscular exertion, and malleable materials or ‘soft grip’ layers that provide grip friction. Some of these also serve to physically guide the fingers or hand, or communicate their

positioning and any relevant motion. A POSITA would also consider the shape and position of a stabilising feature or grip in respect to the center of gravity of the object, which can greatly improve the muscle strain involved in holding or lifting an object.

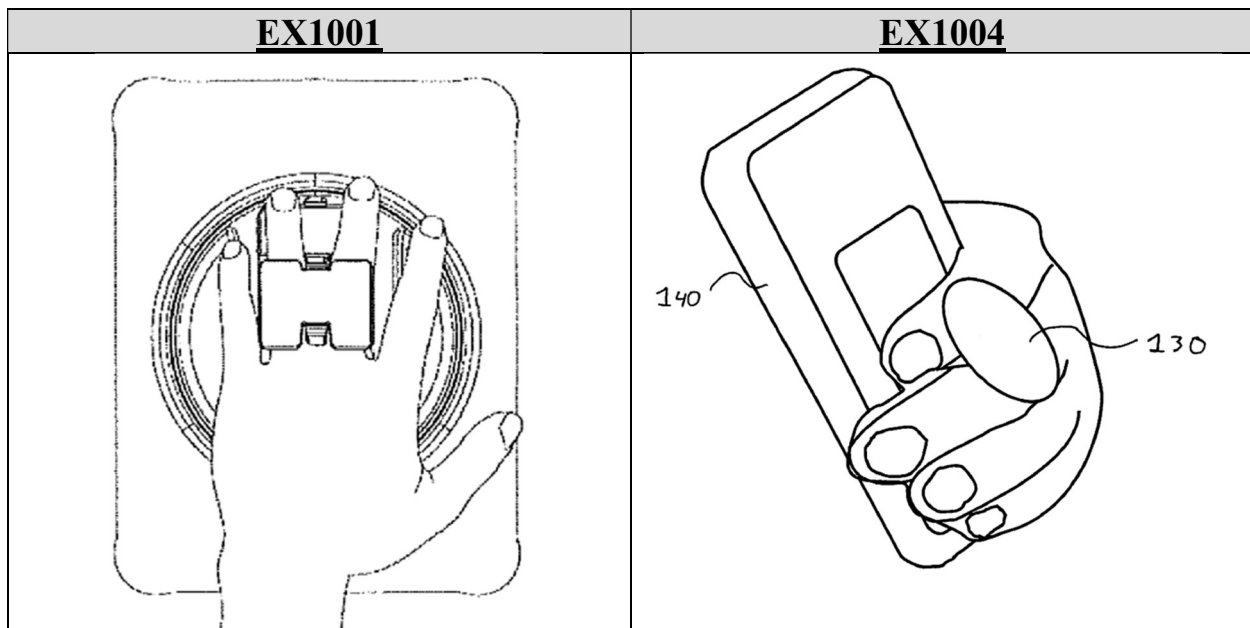
73. Turning from the understanding a person of ordinary skill would have about “grips” generally, Karmatz discloses any ‘stabilising device’ required by the claims of the ’691 Patent as it makes clear that the apparatus described therein promotes stability when the described personal computing device is used with that apparatus by “allow[ing] a user to securely hold a handheld device with a single hand.” EX1004, [0011]; *see also id.* at [0006]-[0010] (“the design of many devices, including bar-shaped devices, for example, although allowing a user to easily access a large touch screen, may create difficulty for users to securely grip these devices with a single hand, which results in users frequently dropping and damaging their devices Therefore, there is a need for an apparatus for securely holding devices.”).
74. To the same point, Karmatz discloses a ‘grip device’ that allows a user to stably and securely hold the described portable computing device. These teachings are repeated consistently throughout the disclosure of Karmatz. For example, Karmatz discloses that the “plurality of extensions 130 [of FIG. 23]

provide additional stability.” EX1004, [0047] (“The plurality of extensions 130 provide additional stability, and in an open state, a distance between adjacent extensions 130 may provide space to accommodate one or more fingers, as illustrated in FIG. 25.”); [0052]. Karmatz likewise explains that the embodiment depicted in FIG. 26 allows a “user [to] securely grip the handheld device 140 while the ends of the user’s fingers rest on a back of the device.” *Id.* [0049]. From these express teachings, Karmatz discloses a ‘stabilising device.’

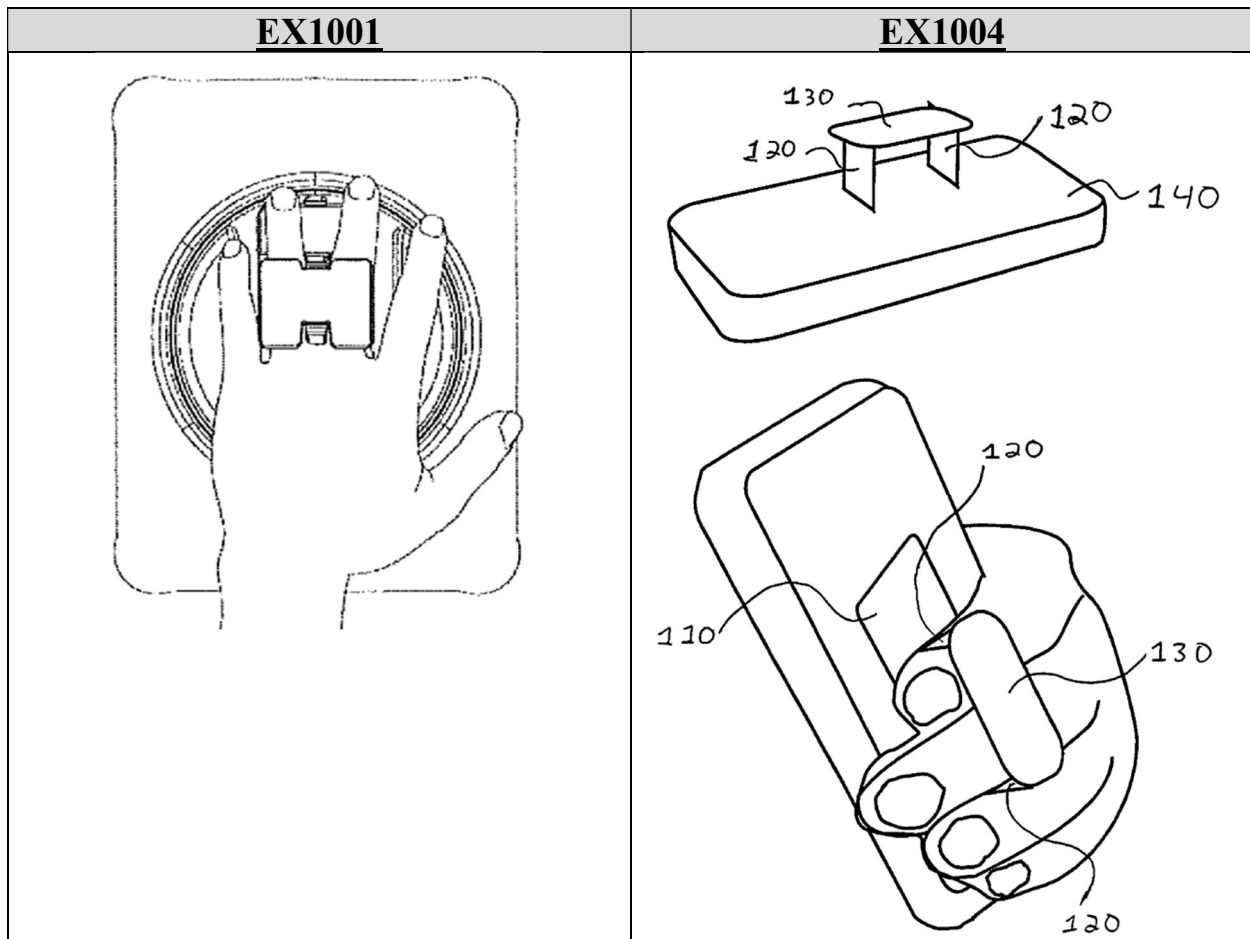
75. I separately consider the issue of ergonomics, based on the Applicant’s comments during prosecution. *E.g.*, EX1002, at 368-369, 371; *and see id.* at 361. During prosecution of the application issuing as the ’691 Patent, the Applicant asserted in remarks filed with its Request for Consideration Under the After Final Consideration Pilot Program 2.0 that “Grieve is not pertinent to the problem with which the Applicant was concerned, namely to provide a more ergonomic support for a tablet computer[.]” EX1002, at 368. I note, however, that the term “ergonomic” does not appear anywhere in the specification of the ’691 Patent, much less in the claims. *See generally* EX1001. Even so, and in the event the Patent Owner asserts that the “ergonomic support” asserted by the Applicant during prosecution reflects a

limitation on the scope of the claims, the grip device of Karmatz is directed to “providing a more ergonomic support for a tablet computer,” because grips (and the like, e.g., handles, holders, grasps, and other structures) are added to devices to change and improve the ergonomics of how a device is held. Indeed, Karmatz includes explicit teachings directed to ergonomic concerns, informing a person of ordinary skill in the art that ergonomic considerations should be and are taken into account through implementation of its teachings or embodiments. *See* EX1004, [0029], [0032].

76. Like the claimed ‘stabilising device’ of the ’691 Patent, Karmatz permits the user to hold a tablet computer with their hand flat, with extensions (Karmatz)/spacers (’691 Patent) secured between the users’ fingers to reduce the muscular exertion or grip required to securely hold the described portable computing device. Indeed, as is apparent from comparison of figures from both Karmatz and the ’691 Patent, both references describe the same way of holding the grip and engaging with the described portable computing device:



77. In both figures above (Fig. 5C from the '691 Patent, and Fig. 4 from Karmatz), the user has slid their finger under the unitary finger support member/grip 130 in order to engage with the described portable computing device. Side portions of the unitary finger support member/grip 120 extend to either side and over the user's fingers. In this configuration, both the '691 Patent and Karmatz require the user to exert the same lateral force through a lateral or sideways grip of two adjacent fingers on the spacers/extension 130 in order to stabilise the device. Thus, Karmatz discloses at least the same ergonomic methods and benefits as implicated by the '691 Patent.
78. Karmatz, however, takes this ergonomic consideration a step further as illustrated at Figures 23 to 25 and related text:

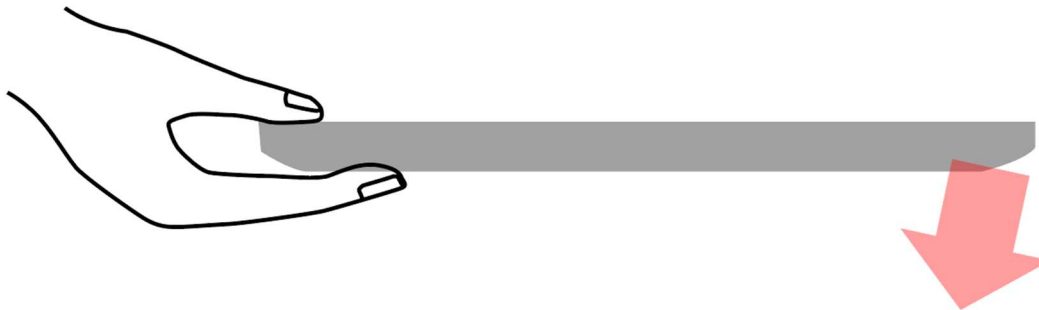


EX1001 and EX1004, Figs. 23 and 25; *and id.* [0046].

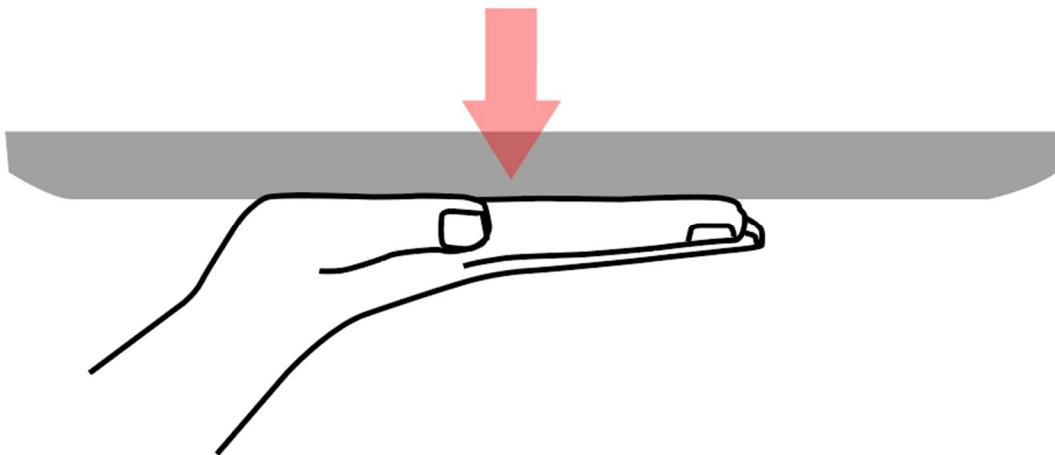
79. This ergonomic benefit is further depicted in Karmatz's Figure 25, which shows an embodiment wherein a user slides a finger (or fingers) in between two extensions 120. The resulting configuration effectively secures the user's retention of the handheld device, and allows the user to resist rotational forces and stabilise the device near the center of gravity and reduces the overall muscle fatigue of the hand and wrist.

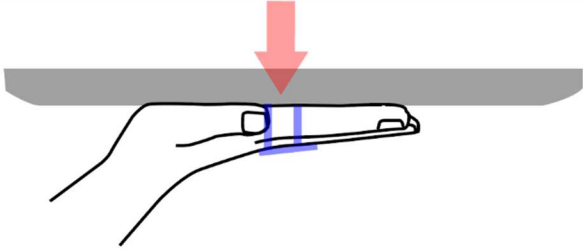
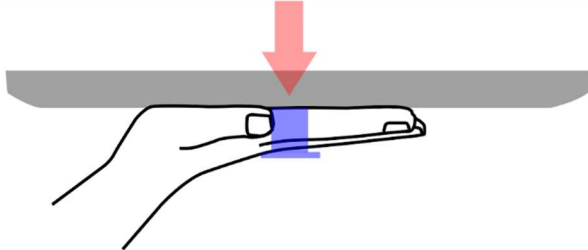
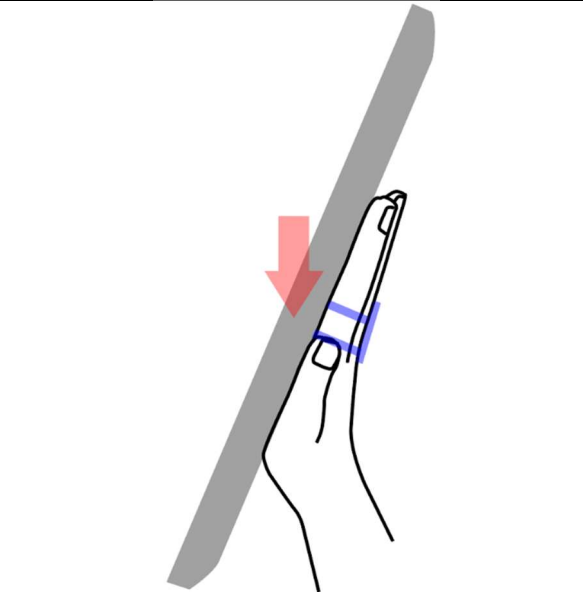
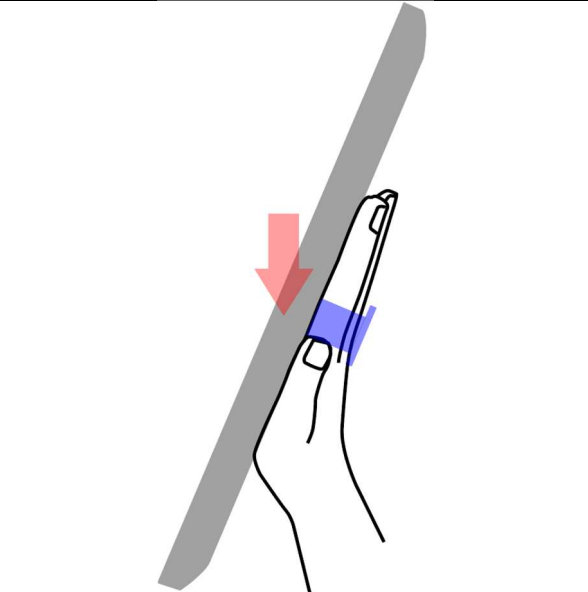
80. From the perspective of ergonomic design considerations, the structure and grip device of Karmatz, including at Figure 23, permits a user to **stabilise** a portable computing device while using the device in a variety of orientations (including vertical) for a prolonged period of time. In my opinion, the grip device of Karmatz discloses a solution to address the same ergonomic benefit asserted by the Applicant about the teachings of the '691 Patent.

Table 3: Ergonomic Impact of an Object's Center of Gravity



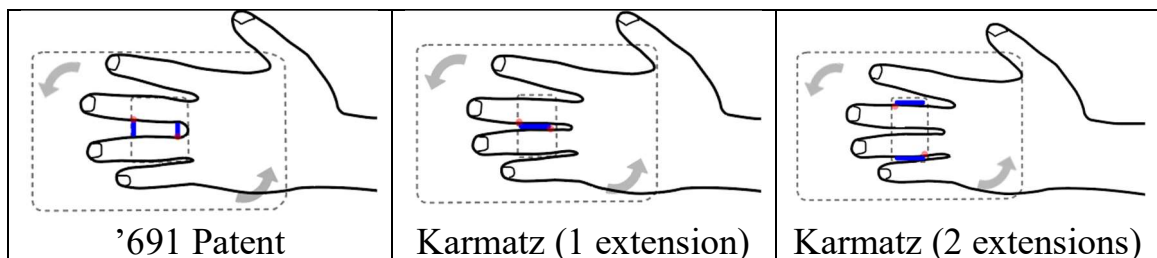
Holding an object like a tablet or tray at the edge –away from the center of gravity, is more difficult because of the forces of torque or leverage (which increases according to how far the fulcrum is from the center of gravity). This can cause a high amount of muscle fatigue.



Holding a tablet or tray near the center of gravity is much easier, and causes much less muscle fatigue. The advantages of this position would be intuitive to both a POSITA and a lay person.	
 The '691 Patent positions the hand near the center of gravity.	 Similarly, Karmatz positions the hand near the center of gravity.
 The '691 Patent also allows the user to hold the object more vertically.	 Karmatz allows the user to hold the object more vertically in the same way.

81. As a POSITA, I understand that although the small finger muscles are still activated by the lateral pinch of both the '691 Patent and Karmatz, a POSITA would recognize that this can reduce overall muscle fatigue of the hand and wrist compared to gripping an object without this feature.

82. Additionally, both designs provide additional stability to resist against **rotational** forces, keeping the direction of the fingers in the same orientation even when the device is rotated, where the sides of the fingers in the lateral pinch withstand the pressure from the outermost edges of the spacer elements, thus keeping the direction of the fingers in the same orientation even when the device is rotated:



83. Turning next to the reference that the ‘stabilising device’ is for a “**portable computing device**,” I repeat the same understanding of when a preamble would be a limitation on claims discussed above. Here, I note that “portable computing device” (unlike ‘stabilising device’) appears in the claims.

Karmatz discloses a stabilising device for the described “portable computing device.”¹⁶

84. Specifically, Karmatz discloses “[a]n apparatus for gripping a handheld device.” EX1004, Abstract. As regards the ’691 Patent’s description of “portable computing device” as being “tablet computers,” Karmatz explains that the “handheld device” described therein can include “an electronic device such mobile phone, Personal Digital Assistant (PDA), portable music player, portable video player, handheld computer, *tablet computer*, electronic book reader, netbook computer, etc., but is not limited thereof.” EX1004, [0012] (emphasis added). The tablet computers described by Karmatz are within the scope of the ’691 Patent’s “portable computing device.” EX1001, 1:23-28 (“Portable computing devices, also known as tablet computers, or tablets...”).

¹⁶ In my opinion and based on the scope of the prior art included as Grounds in this declaration, no construction of the term “portable computing device” is required for the invalidity issues presented here. However, I reserve my right to respond to any construction presented by Patent Owner.

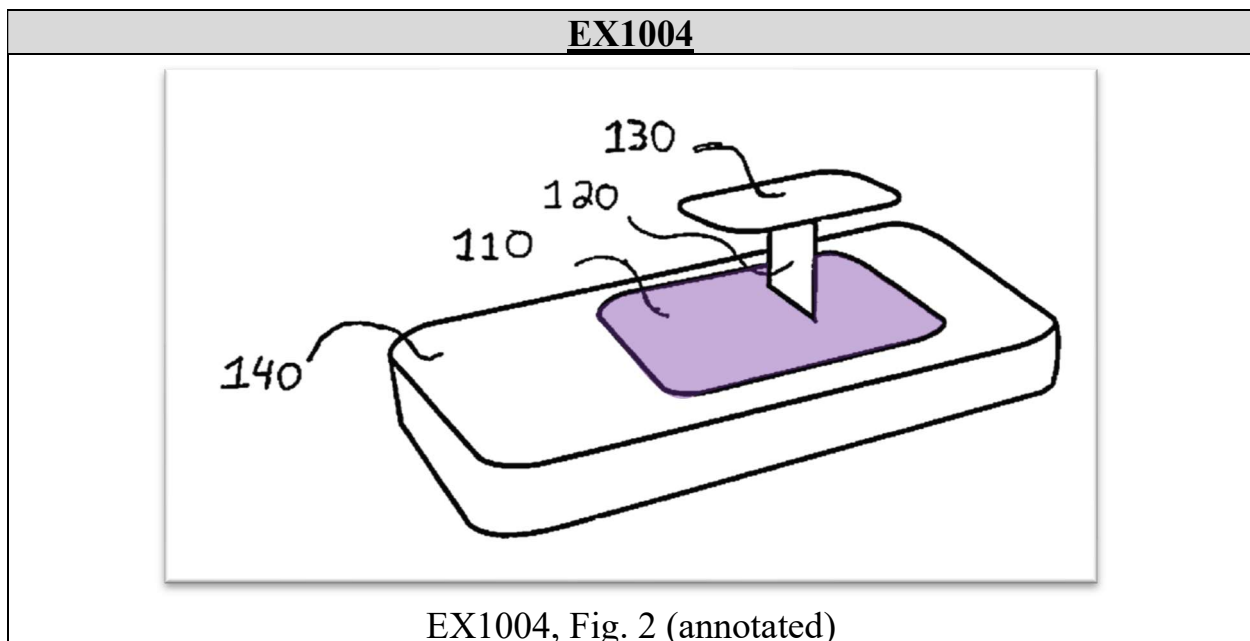
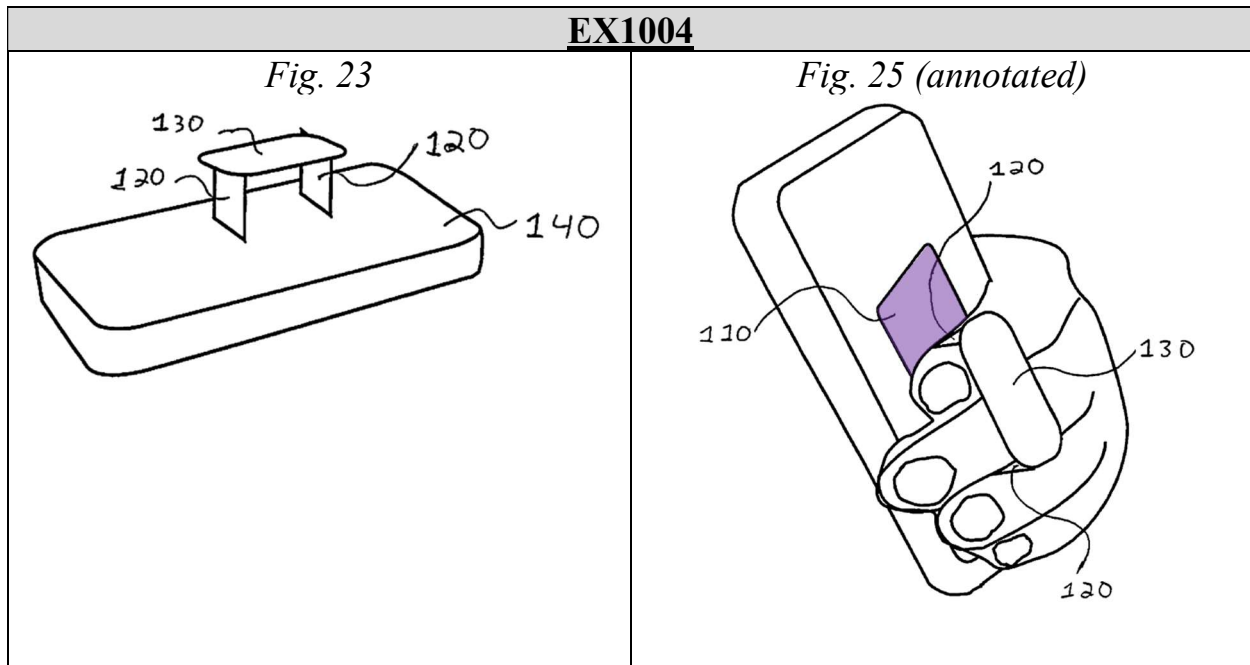
Thus, to the extent “portable computing device” is a limitation, it is my opinion that it is disclosed by Karmatz.

85. In summary, to the extent the preamble is limiting on the scope of the claims, any such limitations are disclosed by Karmatz, including at least at Figure 23.

Claim Element 1a

[1a] a base plate configured to be mounted on the portable computing device and rotatable relative to the portable computing device;

86. Karmatz discloses or renders obvious Claim Element 1a.
87. Karmatz discloses a **base** 110 configured to be mounted on the claimed portable computing device. *See* EX1004, [0047] (“Referring to FIGS. 23 to 25, a grip device according to an embodiment of the present invention may include a plurality of extensions 120 connecting a **base** 110 to a grip 130”). This is shown in multiple depictions of Karmatz, including, for instance, at Figure 25, and through Figure 2:



88. As Karmatz explains, “[r]eferring to FIG. 2, a grip device includes a *base* 110, an extension 120, and a grip 120.” EX1004, [0026] (emphasis added); *see also id.* at [0012] (“The apparatus includes *a base* for affixing the apparatus to a

first surface of the handheld device[.] (emphasis added)"). Karmatz provides the embodiment of Figure 23 includes the same base 110. *See* EX1004, [0047] ("Referring to FIGS. 23 to 25, a grip device according to an embodiment of the present invention may include a plurality of extensions 120 connecting a *base* 110 to a grip 130").

89. As a foundational point, Karmatz repeatedly describes its disclosed "grip device" as including (1) at least one extension 120, connecting (2) a base 110, to (3) a grip 130. *See* EX1004, [0047] ("a plurality of extensions 120 connecting a base 110 to a grip 130"). *And see id.*, Abstract ("The apparatus includes a base for affixing the apparatus to a first surface of the handheld device; at least one extension extending from the base at a first end of the extension; and a grip"), Claim 1 ("at least one extension ..."), [0026] ("a grip device includes a base 110, an extension 120, and a grip 130").
90. Through disclosures directed to the "grip device", Karmatz teaches that the "***grip device may rotate*** ... with respect to the handheld device 140 such that the handheld device 140 may rest in a portrait and/or landscape orientation." In other words, Karmatz's disclosure provides that it is the *grip device* (as a whole) that rotates. *Id.* As the grip device is disclosed as rotating "with respect to the handheld device," and the 'grip device' includes **base** 110, Karmatz

therefore discloses that its base plate is rotatable relative to the portable computing device.¹⁷ *See, e.g.*, EX1004, [0035] (“As shown in FIGS 9 and 10, according to an embodiment of the present invention, ***the grip device may rotate*** . . . with respect to the handheld device 140 such that the handheld device 140 may rest in portrait and/or landscape orientation.” (emphasis added)).

91. The referenced ‘grip device’ comprises a common set of elements throughout the teachings of Karmatz, with variations that a person of ordinary skill would
-

¹⁷ Notably, Karmatz’s disclosures on this point are explicitly disjunctive, teaching that the grip device may (1) rotate, and/or (2) be re-attached or repositioned. *Id.* Karmatz discloses that that “grip device” includes “a base 110, an extension 120, and a grip 130.” *Id.* [0026]; *and see id.* [0047] with Fig. 23 (“a grip device according to an embodiment of the present invention may include a plurality of extensions 120 connecting a *base* 110 to a grip 130.”). A person of skill would understand the plain terms to disclose that the described “grip device” that “may [either be] rotate[d]” relative to the handheld device while remaining attached to the handheld device, or alternatively may be removed and reattached.

understand have no impact on the described ability to “rotate.” For example, while Figure 9 depicts an extension 120, and Figure 23 depicts two extensions 120, a person of ordinary skill would understand that in either depiction the extensions are attached to base 110. See EX1004, [0047] (Fig. 23) and FIGS. 9 and 23. The grip device and the base 110 included as part of that device, based on these disclosures, would necessarily be rotatable absent any teaching to the contrary. Karmatz does not include any such teaching that would prevent rotation of the grip device. As a result, and in my opinion, this limitation is inherently disclosed by Karmatz.

92. To the extent it is found that Karmatz does not anticipate the limitation for “a base plate ... rotatable relative to the portable computing device,” Karmatz explicitly instructs that a person of ordinary skill should modify and combine any discrete embodiments. See EX1004, [0052] (“[T]he present invention is not limited to only [the described] embodiments. More specifically bases, extensions, and grips within grip devices of any of the described embodiments may be interchanged with other bases, extensions, and grips in accordance with other embodiments of the invention, and may be used in conjunction with any of a variety of handheld devices including the handheld devices described and illustrated herein.”).

93. A person of ordinary skill would therefore understand and be directly motivated to combine any such discrete embodiments. I incorporate my explanation above at Paragraph 67.b., where I explained the use of teachings from Figure 9 and 10 to improve the embodiment of Figure 23 by including rotatability.
94. For further example, a person of ordinary skill would understand and be motivated to modify or combine the grip device of Figure 23 (with two extensions 120) with the rotatability disclosed at Paragraph 35 in order to incorporate the claimed benefits described for the feature “such that the handheld device 140 may rest in a portrait and/or landscape orientation,” and as a resolution to the gating issues with the prior art identified by Karmatz. *See* EX1004, [0006] (noting difficulty using larger devices with one hand). Alternatively, a person of skill in the art would be additionally motivated to modify the embodiment of FIG. 9 by adding a second extension 120 in order to realize the “additional stability” provided by the “plurality of extensions.” *Id.* [0047].
95. Karmatz further renders this limitation obvious in view of the knowledge in the art. As discussed above at Paragraph 44.d, the rotatability of tablets was well known in the art, and this market trend would result in design pressure

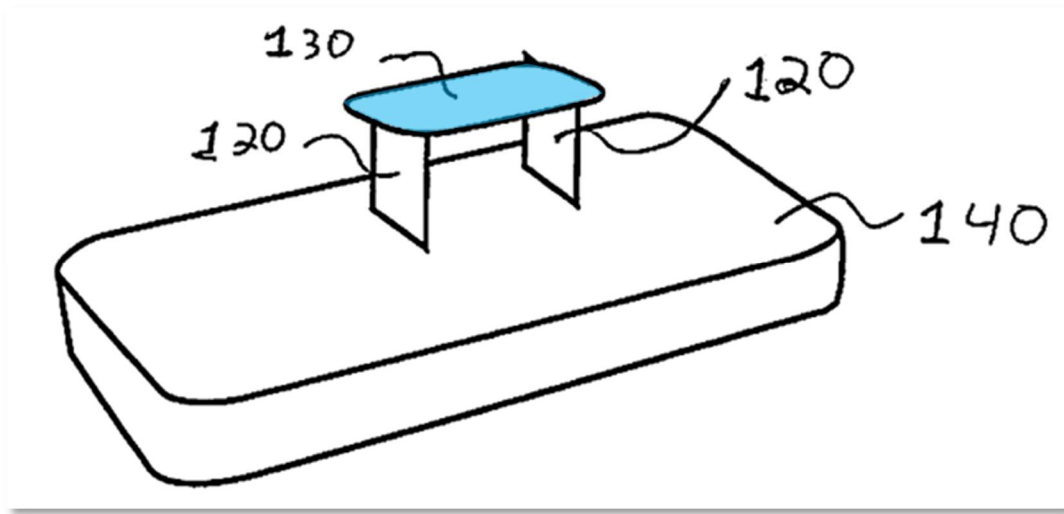
motivating a POSITA to include rotatability in any grip in order to ensure consumers could use the resulting grip with their tablet in any orientation.

96. In my opinion, it would therefore have additionally been obvious to modify Karmatz to include “a base plate configured to be mounted on the portable computing device and rotatable relative to the portable computing device” as required for this limitation.

Claim Element 1b

[1b] a unitary finger support member;

97. Karmatz discloses Claim Element 1b.
98. Karmatz discloses a unitary finger support member. For instance, in the embodiment depicted in Figure 23, Karmatz shows a “**grip** 130,” which corresponds to the “unitary finger support member” of Claim Element 1b. EX1004, [0046]-[0047]. Consistent with the statements of the Applicant during prosecution and as discussed above, the **grip** 130 is “not comprised of two separate portions”:



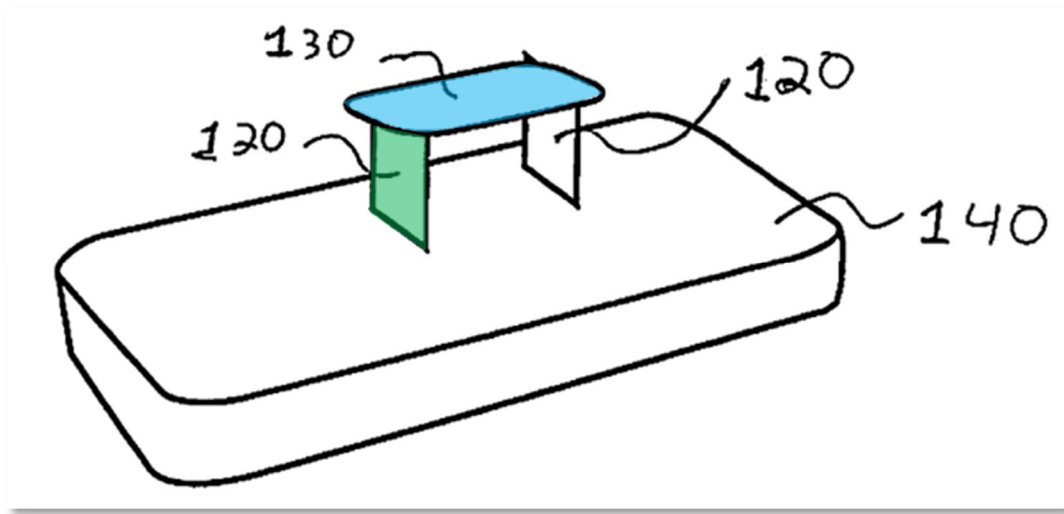
EX1004, Fig. 23 (annotated); *see also id.* at [0012] (“The apparatus includes . . . *a grip*[,] . . . wherein the grip is oriented substantially parallel to the first surface of the handheld device, and wherein the apparatus is adapted to receive a portion of at least one finger inserted between the grip and the handheld device.” (emphasis added)), [0052].

Claim Element 1c

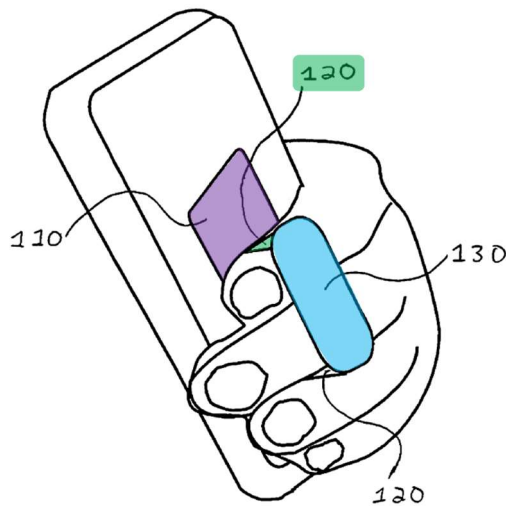
[1c] a first spacer element connected to the unitary finger support member and to the base plate; and

99. Karmatz discloses Claim Element 1c.

100. Specifically, Karmatz discloses a first spacer element (“**extension** 120;” annotated in Figures 23 and 25 below) which is connected to the unitary finger support element (“**grip** 130”; annotated in Figures 23 and 25 below) and the base plate (“**base** 110”; annotated in Figure 25 below). EX1004, [0047].



EX1004, Fig. 23 (annotated).



Id. at Fig. 25 (annotated), [0047] (“Referring to FIGS. 23 to 25, a grip device according to an embodiment of the present invention may include a plurality of **extensions** 120 connecting a **base** 110 to a **grip** 130.”); *see also id.* at [0012] (“The apparatus includes *a base* . . . ; *at least one extension* extending from the base at a first end of the extension; and *a grip* extending from the at

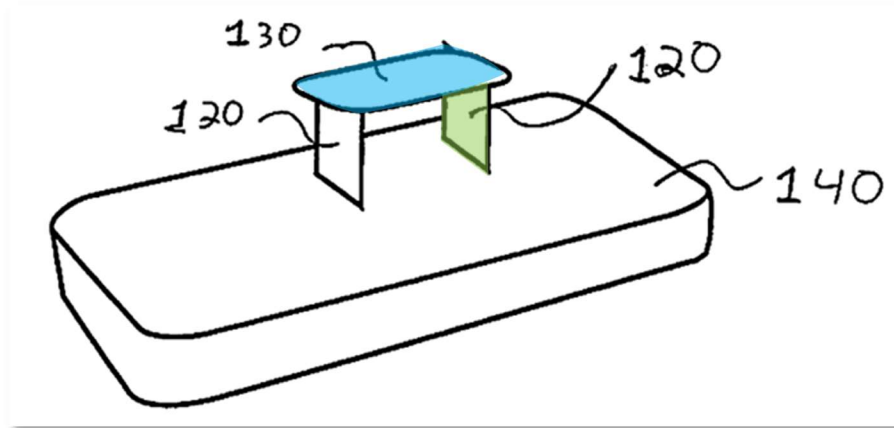
least one extension at a second end of the extension[.]” (emphasis added)),
[0052].

Claim Element 1d

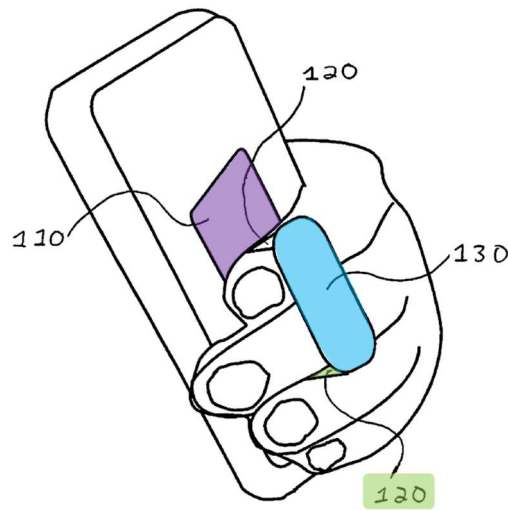
[1d] a second spacer element connected to the unitary finger support member and to the base plate;

101. Karmatz discloses Claim Element 1d.

102. Specifically, Karmatz discloses a second spacer element (a second “**extension** 120;” annotated in Figures 23 and 25 below) which is connected to the unitary finger support element (“**grip** 130;” annotated in Figures 23 and 25 below) and the base plate (“**base** 110;” annotated in Figure 25 below. EX1004, [0047].



EX1004, Fig. 23 (annotated).



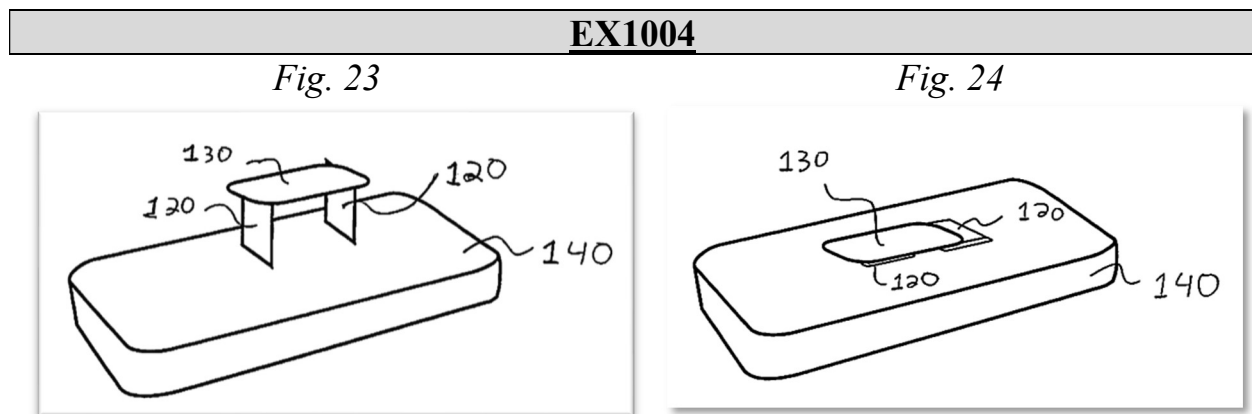
EX1004, Fig. 25 (annotated), [0047] (“Referring to FIGS. 23 to 25, a grip device according to an embodiment of the present invention may include a **plurality of extensions 120** connecting a **base 110** to a **grip 130**.”); *see also id.* at [0012] (“The apparatus includes *a base . . . ; at least one extension* extending from the base at a first end of the extension; and *a grip extending from the at least one extension at a second end of the extension*[.]” (emphasis added)), [0052].

Claim Element 1e

[1e] wherein, the unitary finger support member is moveable between a closed position in which the unitary finger support member is substantially flush with the base plate and

103. Karmatz discloses Claim Element 1e.

104. Karmatz discloses that the claimed unitary finger support member (**grip** 130) is moveable between a closed position in which the unitary finger support member is substantially flush with the base plate (**base** 110) and an open position. Specifically, Figure 24 (depicting a closed state of the embodiment of Figure 23) discloses the grip device of Karmatz in a closed position in which the unitary finger support member [grip 130] is substantially flush with the base plate [base 110]:

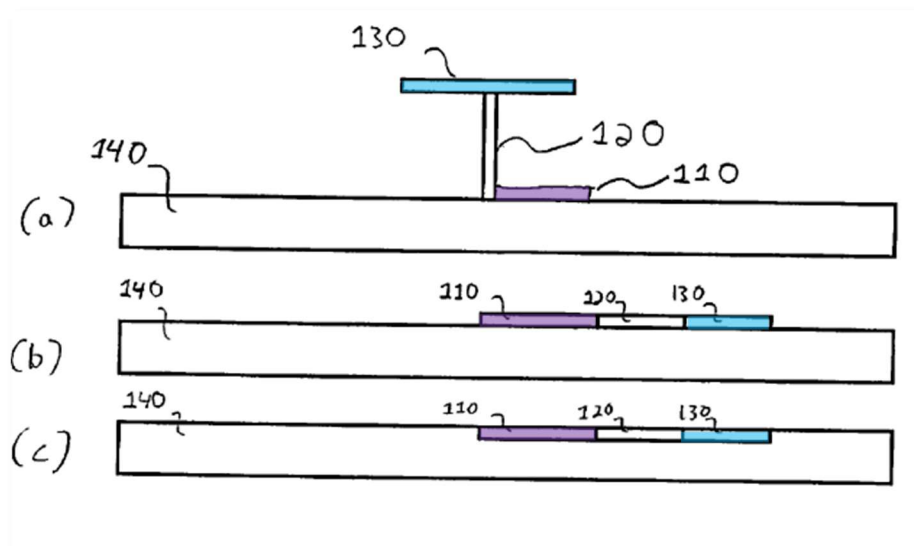


EX1004, Figs. 23 and 24.

105. The configuration of Figure 24 leaves the unitary finger support member [grip 130] “substantially flush” with the base plate [base 110] when in the closed position, because it is placed in a “position[] in which the central portion and first and second ends of the finger support member are ... in close proximity to the base plate.” See Paragraphs 35 and 31-35. Even with the *de minimis* (if any) separation potentially caused by any portion of the extensions 120 that

may rest in between grip 130 and base 110 when in a closed position, as shown in Figure 24, the entirety of the grip 130 (i.e., including the central portion and the first and second ends) are in “close proximity” to the base 110. As the grip 130 is depicted as parallel to the base 110, each portion of the grip 130 is equally “proximate” to the base 110. The “closed position” of Karmatz discloses this limitation.

106. Karmatz further explains that that the “base 110 may protrude from an exterior surface the handheld device 140, or may be affixed to a recess in an upper surface of the handheld device 140 in accordance with embodiments of the present invention.” EX1004, [0031]. While Karmatz instructs this teaching is applicable to the “embodiments of the present invention,” it provides one illustration of the application of this teaching in Figure 7(b) and 7(c):



EX1004, Fig. 7. Figure 7(b) illustrates an example “where the grip device rests on top [of] the handheld device 140 while in a ***closed position***.” EX1004, [0036] (emphasis added). Figure 7(c) illustrates an “alternate configuration[s] where the grip device fits into a recess within the handheld device 140 in a ***closed position***, such that an upper surface of the grip device in the closed position is ***substantially coplanar*** with an adjacent surface of the handheld device 140.” EX1004, [0036] (emphasis added); *and id.* [0031]. In both configurations (whether the base 110 is recessed within or placed on top of the handheld device), Karmatz discloses its “unitary finger support member [grip 110] is moveable between a closed position in which the unitary finger support member is substantially flush with the base plate[,]” as illustrated in Figure 7.

107. While I note this structure (i.e., of a configuration with the grip flush with the outer surface of a handheld device, or where the upper surface of the grip device is “substantially coplanar with an adjacent surface of the handheld device” when closed) is illustrated at Figures 7 and 8, Karmatz explains the underlying teaching applies to the embodiments of its invention. *See id.* [0031]. Further, as discussed above at Paragraphs 88 through 91, Karmatz describes a core structure for its ‘grip device,’ and the referenced ‘grip device’

comprises a common set of elements throughout the teachings of Karmatz, with variations that a person of ordinary skill would understand have no impact on the described ability to close in a “substantially flush” configuration. A POSITA would understand these disclosures to provide that other embodiment (e.g., including the embodiment of Figure 23) would be “substantially coplanar” as described by Karmatz [0031] and [0036]. As a result, in my opinion Karmatz anticipates the “substantially flush” limitation.

108. As explained in the foregoing, in a closed position (whether the base plate is recessed within or placed on top of the handheld device or not), the base 110 is necessarily substantially flush to the grip 130 because it they are in “close proximity.” *See* Paragraph 31 through 35. In view of the same and the further teachings illustrated by the embodiment of Figures 23 (open state) and 24 (closed state), Karmatz necessarily discloses a grip 130 that is substantially flush with base 110 when in a closed state. In my opinion, to the extent Karmatz does not expressly disclose this limitation, it is inherently disclosed. This opinion is supported by the further disclosure of Claim 4 of Karmatz, which is directed to a grip with “at least one extension” (thus including the embodiment of Figure 23), movable from an open to a closed position (Claim 3), where the exposed surface of the grip is substantially coplanar with a

surface of the electronic device when closed (Claim 4, depending upon Claim 3). *See* EX1004.

109. In view of these disclosures, in my opinion Karmatz discloses a “unitary finger support member [grip 130]” that is “moveable between a closed position in which the unitary finger support member is substantially flush with the base plate [base 110].” This confirms Karmatz’s teachings and informs a motivation to design a grip that, when not in use, lays substantially flush and does not add any appreciable depth or bulkiness to the subject portable computing device.
110. To the extent it is found that Karmatz does not anticipate the limitation of “the unitary finger support member is moveable between a closed position in which the unitary finger support member is substantially flush with the base plate,” it would be obvious to modify or combine Karmatz to further implement this feature based on teachings for its other embodiments to arrive at this combination. I discuss possible combinations and the motivations for same above, at Paragraph 67.c. Karmatz explicitly instructs that a person of ordinary skill should modify and combine any discrete embodiments. *See* EX1004, [0052] (“[T]he present invention is not limited to only [the described] embodiments. More specifically bases, extensions, and grips

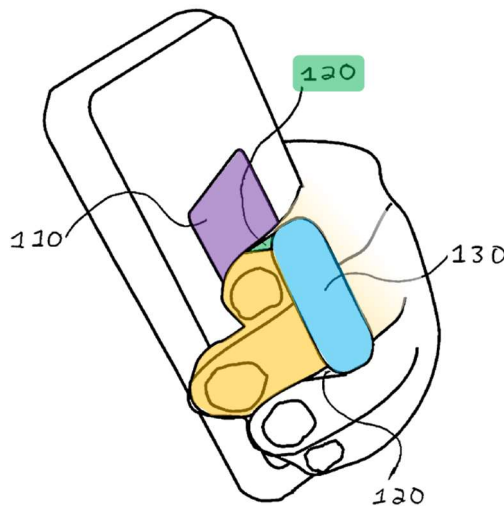
within grip devices of any of the described embodiments may be interchanged with other bases, extensions, and grips in accordance with other embodiments of the invention, and may be used in conjunction with any of a variety of handheld devices including the handheld devices described and illustrated herein.”). A person of ordinary skill would therefore understand and be directly motivated to combine any such discrete embodiments. Here, only a minor modification would be potentially required, with attention to applying the teachings of Figure 7 to those of Figure 23 to benefit from the teachings for a “substantially coplanar” configuration that conforms to and secures the benefits of Karmatz’s other teachings for a low-profile grip device, or alternatively the teachings of Figure 23 to Figure 7 to secure the benefit of “additional stability” afforded by the plurality of extensions. *See* EX1004, [0031] and [0047]. There would be no identifiable impediments to such a combination as it would merely reflect the incorporation of the flat profile teachings of Figure 7 into Figure 23, or the addition of a single extension (consistent with other teachings and disclosures, *see* EX1004, Claims 1, 3, and 4) to Figure 7’s disclosure.

Claim Element 1f

an open position in which the unitary finger support member is spaced from the base plate such that a user can insert at least one unitary finger between the base plate and the unitary finger support member.

111. Karmatz discloses Claim Element 1f.

112. Specifically, Karmatz discloses an open position in which the unitary finger support member (grip 130) is spaced from the base plate (base 110) such that a user can insert **at least one unitary finger** between the base plate and the unitary finger support member. Such an open position is shown in Figure 25 of Karmatz.



EX1004, Fig. 25; *see also id.* at [0033] (disclosing “In a case where the grip device is manufactures as a single piece, thickness of the material may vary in order for the grip device to be more flexible between the extension 120 and

either of the base 110 and the grip 130 than the thickness of material in remainder of the grip device, in order to allow the grip device to move from *an open position* in which a user grips” (emphasis added)), [0037] (“FIGS. 11 through 17 are diagrams illustrating grip devices that are movable from an open position into a closed position according to other embodiments of the present invention.”).

113. Thus, in my view Karmatz anticipates or renders Claim 1 obvious.

Claim 20

114. As demonstrated in the table below, the language of Claim 20, the only other independent claim of the ’691 Patent, largely aligns with the language of Claim 1. Differences between Claim 1 and Claim 20 are presented in red and underlined.

Claim 1	Claim 20
1. A stabilising device for a portable computing device, the stabilising device comprising:	20. A stabilising device for a portable computing device, the stabilising device comprising:
a base plate configured to be mounted on the portable computing device and rotatable relative to the portable computing device;	a base plate configured to be mounted on the portable computing device and rotatable relative to the portable computing device;
a <u>unitary</u> finger support member;	a finger support member <u>having a first side and a second side</u> ;
a first spacer element connected to the <u>unitary</u> finger support member and to	a first spacer element connected to <u>the first side of</u> the finger support member

the base plate; and	and to the base plate; and
a second spacer element connected to the <u>unitary</u> finger support member and to the base plate;	a second spacer element connected to <u>the second side of</u> the finger support member and to the base plate;
wherein, the <u>unitary</u> finger support member is moveable between a closed position in which the <u>unitary</u> finger support member is substantially flush with the base plate and	wherein, the finger support member is moveable between a closed position in which the finger support member is substantially flush with the base plate and
an open position in which the <u>unitary</u> finger support member is spaced from the base plate such that a user can insert at least one <u>unitary</u> finger between the base plate and the <u>unitary</u> finger support member.	an open position in which the finger support member is spaced from the base plate such that a user can insert at least one finger between the base plate and the finger support member; and
	<u>wherein the base plate is rotatable when the finger support member is in the closed position.</u>

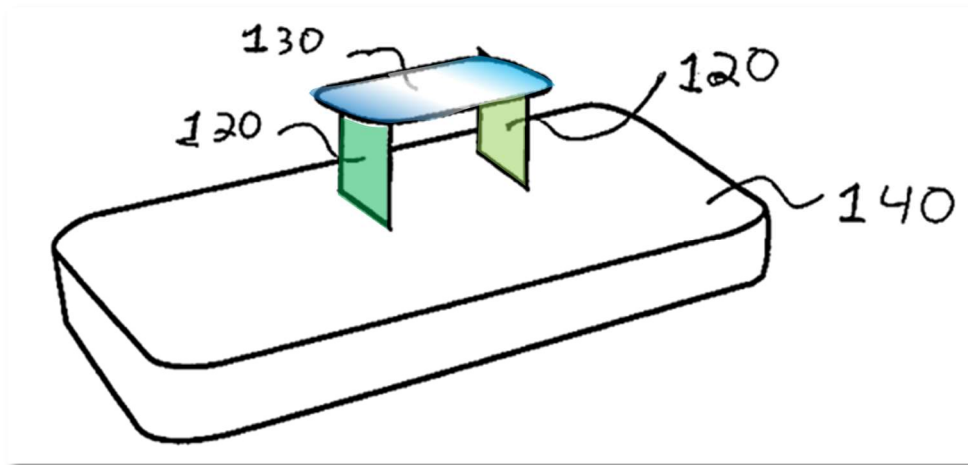
115. As can be seen above, there are three primary differences between Claim 1 and Claim 20:

1. the repeated limitation of Claim 1 that the claimed finger support member is “unitary;”
2. the limitations of Claim 20 that the claimed finger support member has a first and second side that are connected to the claimed first and second spacer elements respectively; and

3. the additional limitation of Claim 20 that the claimed base plate is rotatable specifically when the finger support member is in the closed position.

Compare EX1001, Col. 11:34-50 *with id.* at Col. 12:46-66.

116. Regarding the requirement of Claim 1 that the finger support member be **unitary**, the absence of this limitation from Claim 20 means additional analysis is unnecessary as, in this respect, Claim 20 is broader than Claim 1, and this limitation is disclosed by Karmatz. *See* Paragraph 97, above (Claim Element 1b).
117. Regarding the limitations of Claim 20 that the finger support member have a **first** (dark blue, below) and **second side** (light blue), and that it is these sides that are attached to the **first** (dark green) and **second spacer elements** (light green), Karmatz clearly discloses this arrangement as shown in the below annotations of Figure 23:



EX1004, Fig. 23 (annotated).

118. Regarding the additional limitation of Claim 20 requiring that the base plate be **rotatable** when the finger support member is in the closed position (that is, when in a position in which the central portion and first and second ends of the finger support member are in contact with or in close proximity to the base plate), Karmatz discloses or renders obvious this arrangement. *See* EX1004, at [0035] (“the grip device may rotate and/or be re-attached or repositioned with respect to the handheld device 140 such that the handheld device 140 may rest in a portrait and/or landscape orientation.”), [0052]. I discussed the rotatability of the grip device above, at Paragraphs 67.b and 89 to 92. Expanding on that discussion, Karmatz discloses that the “grip device may rotate” without regard for whether it was in an open or closed position, and distinct from its alternative teaching that the grip device may be “re-

attached or repositioned.” *Id.*; *id.* [0047]. That is, Karmatz’s disclosure does not provide that the grip device may rotate only when open. In my opinion, Karmatz discloses this limitation based on the same reasoning provided above.

119. Alternatively, if Karmatz is found to not expressly disclose this limitation, there is no teaching of Karmatz that indicates the rotatable grip to lock into position when closed, or suggests any structure that would prevent such rotation when closed and enable such rotation only when open. The grip therefore would necessarily also be rotatable in the closed position if it was rotatable in any position, and is therefore inherently disclosed.
120. In light of its disclosures, Karmatz expressly or inherently discloses this limitation.
121. Alternatively, and for the reasons stated above at Paragraphs 44.d and 67.b, it would have been obvious to modify Karmatz to improve the rotatability of the grip device based on the teachings for Figures 9 and 10 or as motivated based on design pressure caused by the market trends and design pressures I described above. EX1004, [0035].
122. Specifically, a POSITA would be aware of how tablet computers and ebooks provide automatic screen display rotation and would therefore be motivated

to extend the functionality of Karmatz for this purpose. *See* Paragraph 44.d. Hyseni also confirms the need known in the art and disclosed that with portable electronic devices “such as the iPad” (EX1009, 1:26-28), “a market trend in these portable devices is that they now offer screen displays and keyboards that can alternate between a relatively vertical and relatively horizontal configuration.” (EX1009, 1:43-46) “These shifts require the user moving his hand from one position to another, and sometimes results in grip loss, with the device and case subsequently falling to the ground.” (EX1009, 1:54-57). Therefore, the need for a solution and the market forces motivating such modifications and combinations would be known to a POSITA at the time.

123. Thus, in my view Karmatz anticipates or renders Claim 20 obvious.

Claim 2

2. A stabilising device according to claim 1, wherein the base plate is releasably mounted onto the rear face of the portable computing device.

124. Karmatz discloses a base plate (base 110) that is releasably mounted onto the rear face of the claimed portable computing device (handheld device 140). “The base 110 may be formed as a plate or other shape, ***removably*** or permanently affixed to the [handheld] by an adhesive or other mounting

hardware such as screws or rivets. . . .” EX1004, [0029] (emphasis added); *and see id.* [0028] (noting specific illustration at Figure 2 but describing application of teachings to present invention, before discussing removable affixation).

125. To the extent it is found that Karmatz does not anticipate this limitation, Karmatz additionally renders this limitation obvious. Karmatz teaches that “bases, extensions, and grips within grip devices of any of the described embodiments may be interchanged with other bases, extensions, and grips in accordance with other embodiments of the invention[.]” EX1004, [0052]. Karmatz thus provides that the teachings for the embodiments are interchangeable, and expressly instructs persons of ordinary skill to modify and combine the various disclosed embodiments in view of the discrete teaching of Karmatz.
126. Here, to the extent the disclosure of removable affixation is not anticipated as to Karmatz, a person of ordinary skill would be motivated to modify Figure 23 as explained above at Paragraph 67.a. A POSITA would be motivated to modify Figure 23 with the teachings of Paragraph [0029], specifically deploying its teachings for the use of “an adhesive or other mounting hardware such as screws or rivets”, in order to modify the base of Figure 23 and

resulting in a combination with the disclosed “additional stability” that is not permanently affixed to the described portable computing device. This would also be motivated as one of finite potential options for utilizing the grip (i.e., either removably or permanently attached), with predictable results and expectation of success.

127. Thus, in my view, Karmatz anticipates or renders Claim 2 obvious in view of its other disclosures.

Claim 3

3. A stabilising device according to claim 1, wherein the base plate is housed in a casing configured to be mounted on the portable computing device.

128. Karmatz discloses that the base plate (base 110) is housed in a casing configured to be mounted on the claimed portable computing device (handheld device 140). “The base 110 may also be ***integrated into a removable protective case***, clip-on, or slide-on attachment/accessory for the handheld device 140.” EX1004, [0029]; *id.* [0028] (noting specific illustration at Figure 2 but describing application of teachings to present invention, before discussing removable affixation).

129. These teachings are further disclosed by Karmatz, through its claims. *See also id.* at Claim 21 (“wherein the base is integrated into a removable case adapted

to substantially cover at least one surface of the handheld device.”) *and* Claim 1 (claiming grip device with “at least one extension extending from the base at a first end of the extension”); Figs. 23-25. The structure of Figure 23 and its related and general teachings are claimed at Claim 1, which calls for:

a base for affixing the apparatus to a first surface of the handheld device;	Base 110. EX1004, [0047] <i>and id.</i> Figs. 23-25 at base 110.
at least one extension extending from the base at a first end of the extension; and	Extensions 120. EX1004, [0047] <i>and id.</i> Figs. 23-25 at extension 120.
a grip extending from the at least one extension at a second end of the extension,	Grip 130. EX1004, [0047] <i>and id.</i> Figs. 23-25 at grip 130.
wherein the grip is oriented substantially parallel to the first surface of the handheld device, and	<i>See</i> Figure 25 <i>and</i> [0047] (grip 130 parallel to surface of handheld device 140)
wherein the apparatus is adapted to receive a portion of at least one finger inserted between the grip and the handheld device.	<i>See</i> Figure 25 (showing grip device receiving fingers of user in between grip 130 and handheld device 140)

EX1004, Claim 1. Claim 21 includes the further limitation such that Figure 23 and its related and general teachings include the ability to be integrated into a casing (“removable sleeve”): “wherein the base is *integrated into a removable sleeve* adapted to substantially cover at least one surface of the handheld device.” EX1004, Claim 21.

130. To the extent it is found that Karmatz does not anticipate this limitation, Karmatz additionally renders this limitation obvious. Karmatz teaches that “bases, extensions, and grips within grip devices of any of the described embodiments may be interchanged with other bases, extensions, and grips in accordance with other embodiments of the invention[.]” EX1004, [0052]. Karmatz thus provides that the teachings for the embodiments are interchangeable, and expressly instructs persons of ordinary skill to modify and combine the various disclosed embodiments in view of the discrete teaching of Karmatz. As explained above at Paragraph 67.a, the person of ordinary skill would have been motivated to modify Karmatz with the teachings of Paragraph [0029], specifically deploying its teachings for “integrat[ing the base 110] into a removable protective case”, in order to secure a solution combining the disclosed “additional stability” while affording protection to the described portable computing device. This would

be additionally motivated by Karmatz's concern with 'securely holding' the handheld device, and the recognition that "users frequently drop[] and damage[e] their devices." *Id.* [0006].

131. This would be further driven by a POSITA's knowledge of the common use of protective cases for tablet computers, leaving functionality of such a stabilising device as part of a protective case solution would be driven by market forces and the resulting design incentives.¹⁸ *And see* Paragraph 44.a. A POSITA would understand the risk of such drops, even after deploying the grip device of Karmatz, would recognize the benefit of affording additional protection, and be motivated to apply the teaching to Karmatz as a result.
132. Thus, in my view Karmatz anticipates or renders Claim 3 obvious.

¹⁸ EX1012, U.S. Patent No. 8,922,985, at Cover, 1:61 and 2:33-34 (claiming priority date of Nov. 11, 2001, for a "A protective enclosure for an electronic device" including "for a tablet PC").

Claim 4

4. The stabilising device according to claim 3, wherein the base plate is rotatable relative to the casing.

133. Karmatz discloses that the base plate (base 110) is rotatable relative to the casing of Claim 3. As explained above, Karmatz discloses that the base plate is housed in a casing configured to be mounted on the claimed portable computing device. *See supra* Claim 3. Karmatz also discloses that the grip device (which includes base [plate] 110) is rotatable, leaving the base plate rotatable relative to the casing. EX1004, [0035] (“[A]ccording to an embodiment of the present invention, the grip device may rotate and/or be re-attached or repositioned with respect to the handheld device 140 such that the handheld device 140 may rest in a portrait and/or landscape orientation.”); *see also id.* at [0052]. *And see* Paragraph 44.d, above.

134. To the extent Karmatz does not explicitly disclose that base 110 rotates relative a casing, such a correlation is necessarily disclosed. In the embodiment of Claim 3 (see above), the base plate is rotatable relative the claimed portable computing device (as required by Claim 1, at limitation 1a). As the protective case of Claim 3 would not rotate relative to the handheld device, Claim Limitation 1a requirement that the base plate is “rotatable relative to the portable computing device [handheld device]” shows it is

necessarily rotatable relative the protective case as well. *See* EX1004, [0029], [0035], [0052]. As a result, this claim is inherently disclosed by Karmatz.

135. To the extent it is found that Karmatz does not anticipate this limitation, Karmatz additionally renders this limitation obvious in view of its various embodiments, as described above at Paragraphs 44.d and 67.a. Karmatz teaches that “bases, extensions, and grips within grip devices of any of the described embodiments may be interchanged with other bases, extensions, and grips in accordance with other embodiments of the invention[.]” EX1004, [0052]. Karmatz thus provides that the teachings for the embodiments are interchangeable, and expressly instructs persons of ordinary skill to modify and combine the various disclosed embodiments in view of the discrete teaching of Karmatz. Here, a person of ordinary skill would be motivated to modify Karmatz, described above at Claims 1 and 3, by integrating the base 110 into a sleeve, casing, housing, or protective case (*see id.* [0052]) in order to provide protection to the described portable computing device. Such a modification would result in the claimed limitation, and be motivated at least by design pressure to make the grip device compatible with an enclosed handheld device in any given orientation. This would be based (as discussed) on POSITA’s awareness of the use of such handheld devices in numerous

orientations. *See* Paragraph 122, above. Alternatively, it would have been obvious to a POSITA to modify Karmatz based on market trends (*see* Paragraph 44.d) driving design pressure to ensure a grip and protective case permitted rotatability of the described portable computing device, leaving it obvious to make this combination as a known technique with predictable outcomes and expected success.

136. In my opinion, Karmatz anticipates or renders Claim 4 obvious.

Claim 5 and 6

5. The stabilising device according to claim 1, wherein the first spacer element is connected to the base plate by means of a pivotal connection.

6. The stabilising device according to claim 1, wherein the first spacer element is connected to the unitary finger support member by means of a pivotal connection.

137. Karmatz discloses that the first spacer element (an extension 120) is connected to the base plate (base 110) by means of a pivotal connection, and that the first spacer element (extension 120) is connected to the unitary finger support member (grip 130). This is illustrated in the difference between Karmatz's Figures 23 and 24, which show Karmatz in an open and closed connection, with the intersection between the first space element (extension 120) and base plate (base 110) and between the first spacer element (extension 120) and unitary finger support member (grip 130) flexing as a pivotal connection to

allow the grip device to transition between open and closed positions. These figures illustrate the pivotal connection between a first spacer element and the base (**lavendar** annotation) and between the first spacer element and the unitary finger support member (**red**):

EX1004

Fig. 23

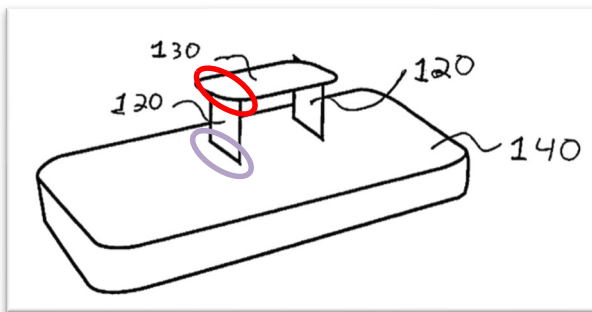
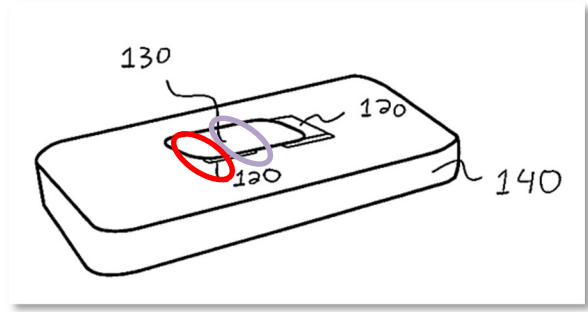
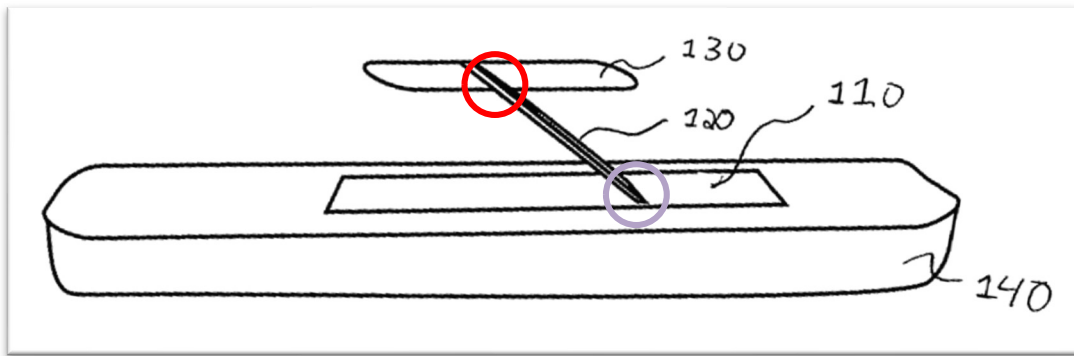


Fig. 24



EX1004, Figs. 23, 24 (annotated); *and see also id.* [0033] (“thickness of the material may vary in order for the grip device to be more flexible between the extension 120 and either of the base 110... in order to allow the grip device to move from an open position ... into a closed position for storage.”).

138. The pivotal connection is also illustrated in Figure 12 of Karmatz, with a pivotal connection between a spacer element and the base (**lavendar**) and between a spacer element and the unitary finger support member (**red**):



EX1004, Fig. 12 (annotated); *see also id.*, [0038] (“Referring to FIG. 11, an **extension** 120 of a grip device may be movably connected to the **base** 110 and **grip** 130 such that the grip device 140 may transition from the gripping position through an intermediate state illustrated in FIG. 12 into a closed position[.]”) *with* Figs. 11-13.

139. To the extent a pivotal connection between the extension 120 and base 110 and the grip 130 is not explicitly disclosed by Karmatz, it is inherently disclosed, as these elements necessarily pivot around a pivotal connections between the extension 120 and the base 110 and grip 130:

EX1004

Fig. 23

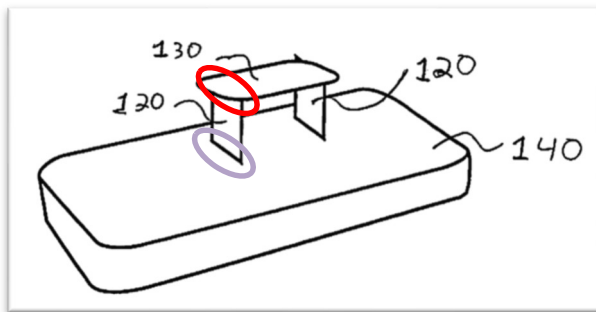
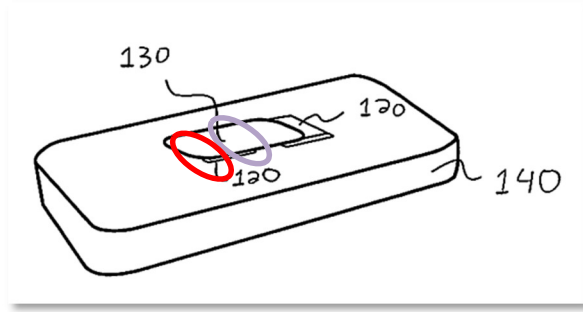


Fig. 24



EX1004, Figs. 23 and 24 (annotated).

140. Use of living hinges to create such a pivotal connection was well known in the art. *See, e.g.*, EX1008 (Wyers), 6:14-17; EX1017 (Lawson), at 1 and 5:61-67 (claiming priority Oct. 7, 2013, “The hinge 215 can be a living hinge. In one example, the living hinge can be made of the same material as the compartment door 205, but can be significantly thinner to permit flexing.”); EX1018 (Reznar), at 2, Claim 8 (claiming priority June 2, 2011, “wherein the hinge is a flexible living hinge coupling together moveable and rigid walls of the body, and the hinge is thinner than adjacent portions of the rigid walls.”).
141. To the extent it is found that Karmatz does not anticipate these claims, Karmatz additionally renders these claims obvious, as described above at Paragraph 67.d. As explained, a POSITA would be familiar with methods of manufacture including injection molding and co-molding processes (i.e., injection molding used with two plastic materials to form and bond them

together). In light of the mechanical simplicity of Karmatz, a person of ordinary skill in the art would readily identify such techniques as acceptable if not ideal for use based on the efficient, low-cost means for manufacture. The use of varying thicknesses to create ‘living hinges’ in an injection molded product is well known and commonly used to permit a portion of a product to integrally hinge or pivot without adding additional manufacturing cost. *See* Paragraph 140, above.

142. Karmatz confirms the state of the art before the filing of the ’691 Patent and its applicability to products in this field of endeavor, teaching that “the entire grip device may be manufactured as a single piece.... In a case where the grip device is manufactured as a single piece, thickness of the material may vary in order for the grip device to be more flexible between the extension 120 and either of the base 110 and the grip 130 than the thickness of material in remainder of the grip device, in order to allow the grip device to move from an open position in which a user grips the handheld device 140 into a closed position for storage.” EX1004, [0033].
143. In my opinion and based on the above, it would have been obvious to manufacture (and thus modify, to the extent not otherwise disclosed) Karmatz to be integrally formed, and to vary the thickness of the portions between the

grip 130 and the extensions 120, and the extensions 120 and the base 110, to permit the grip device to fold or pivot. Such a pivotal connection would be motivated and identified as necessary based on Karmatz's teachings that grip 130 was to transition from an open to closed position (and back) in order to provide for its expected operation, as routine application of the knowledge of the POSITA to improve a known device, rendering predictable results with an expectation of success. This would result in an embodiment where the "first spacer element [extension 120] is connected to the base plate [base 110]" and "to the unitary finger support member by means of a pivotal connection" "by means of a pivotal connection" as claimed.

144. In my view, Karmatz anticipates or renders these claims obvious.

Claim 7 and 8

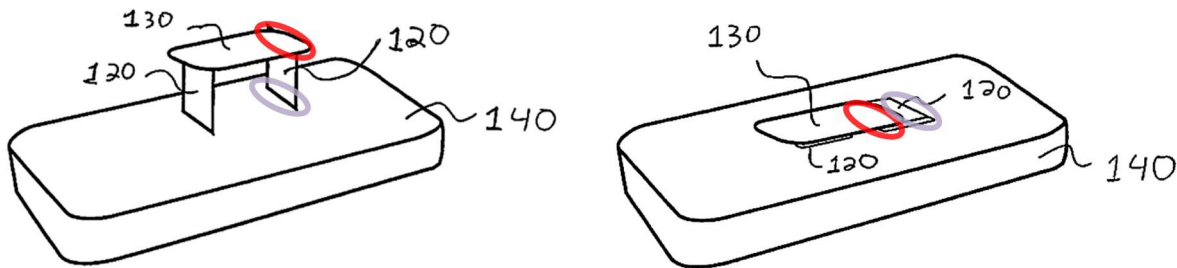
7. The stabilising device according to claim 1, wherein the second spacer element is connected to the unitary finger support member by means of a pivotal connection.

8. The stabilising device according to claim 1, wherein the second spacer element is connected to the base plate by means of a pivotal connection.

145. As explained above in connection with Claim 6, Karmatz discloses a pivotal connection between a spacer element and a unitary finger support member.

See supra Claim 6. For the same reasons discussed above at Paragraphs 137

to 142, Figures 23 and 24 of Karmatz depict the use of a pivotal connection between both (1) a second spacer element and a unitary finger support member (grip 130) (**red**, below), and (2) a second spacer element and a base plate (base 110) (**lavender**):



EX1004, Figs. 23 and 24 (annotated); *see also id.*, [0052].

146. The use of such a pivotal connection (*e.g.*, through the use of a fold, notch, or groove formed in the integrally formed “stabilising device” of Karmatz) is necessary to accomplish the transition between the open and closed states depicted in Figures 23 and 24. *See* EX1004, [0052]. A POSITA would also understand how to form such pivotal connections with minimal, if any, experimentation. *See* EX1004, [0052]; EX1008, 6:14-17; *and see sources* at Paragraph 140. The limitation of Claim 7 is thus both expressly and inherently disclosed by Karmatz.

147. To the extent it is found that Karmatz does not anticipate this limitation, Karmatz additionally renders these claims obvious in view of its various embodiments, as described above at Paragraphs 67.d, and 140-143. For the same reasons described above as to disclosure of a connection between the first spacer element [extension 120] connected to the base plate [base 110] and to the unitary finger support member (grip 130) by means of a “pivotal connection,” the modification described at Paragraph 141 would result in a second space element [extension 120] connected to the unitary finger support member [grip 130] and to the base plate (base 110) by means of the claimed “pivotal connection.”
148. Karmatz thereby anticipates or renders these claims obvious.

Claims 9-11

- 9. The stabilising device according to claim 8, wherein the pivotal connection is provided between the second spacer element and a slidable element in communication with the base plate, the slidable element being slidable such that the unitary finger support member can move between the closed position and the open position.***
- 10. The stabilising device according to claim 9, wherein the slidable element is housed in a recess in the base plate.***
- 11. The stabilising device according to claim 10, wherein the recess defines a channel in which slidable element can move.***

149. Karmatz discloses that the stabilising device and pivotal connections provided between the first and second spacer elements (extensions 120) and the base [plate] (110) “may be formed as a *slidable bar that slides into a recess of the base 110*, the grip 130, and/or the handheld device 140.” EX1004, [0043]. Karmatz’s disclosure of such a “slidable bar,” housed into a recess defining a channel in the base plate is explicitly connected to the process of converting between a closed and an open position. EX1004, [0043].
150. Karmatz additionally renders this limitation obvious. As discussed above, Karmatz teaches that each of the bases, extensions, and grips included in its embodiments may be interchanged with other bases, extensions, and grips in keeping with the spirit of the invention. EX1004, [0052]. To the extent the disclosure of Karmatz [0043] that “the extension 120 may be formed as a slidable bar that slides into a recess of the base 110, the grip 130, and/or the handheld device 140” is found to relate only to the embodiment of Figure 18, it would have been obvious to a person of ordinary skill to implement this teaching as a modification to the base of Figure 23.
151. This modification be based on Karmatz’s express instruction that a POSITA would combine elements (e.g. here, the extensions 120 and grip 130 of Figure 23 with the base of Figure 18 with a slidable bar sliding into a recess of the

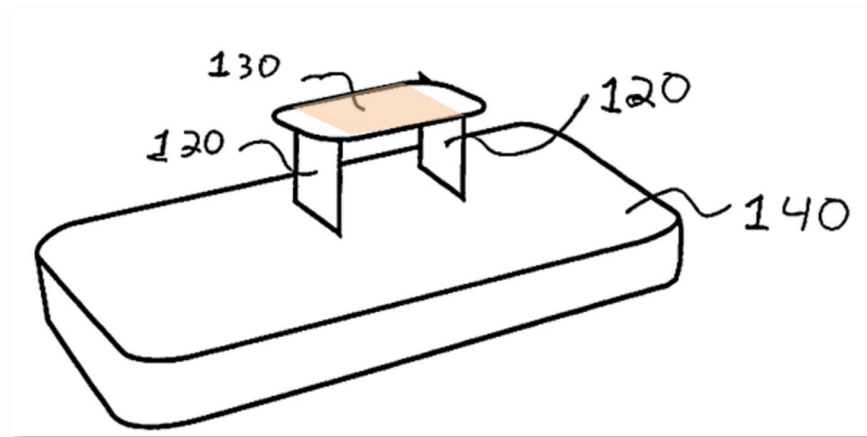
base 110 with) and would be consistent with and motivated by Karmatz's teachings that it would have a low profile and fold flat against the base 110 and handheld device. See EX1004, Fig. 23-25. The modification to the intersection of the extensions 120 and the base 110 would not require any significant redesign, and would instead reflect the simple incorporation of a known technique (the sliding pivotal connection configuration of Figure 18) into a known embodiment with predictable results. The resulting combination would feature a recess in the base plate into which the slidable element could move, and which slidable element would permit the unitary finger support member to move between the closed position and the open position.

152. In my opinion, Karmatz renders these claims obvious.

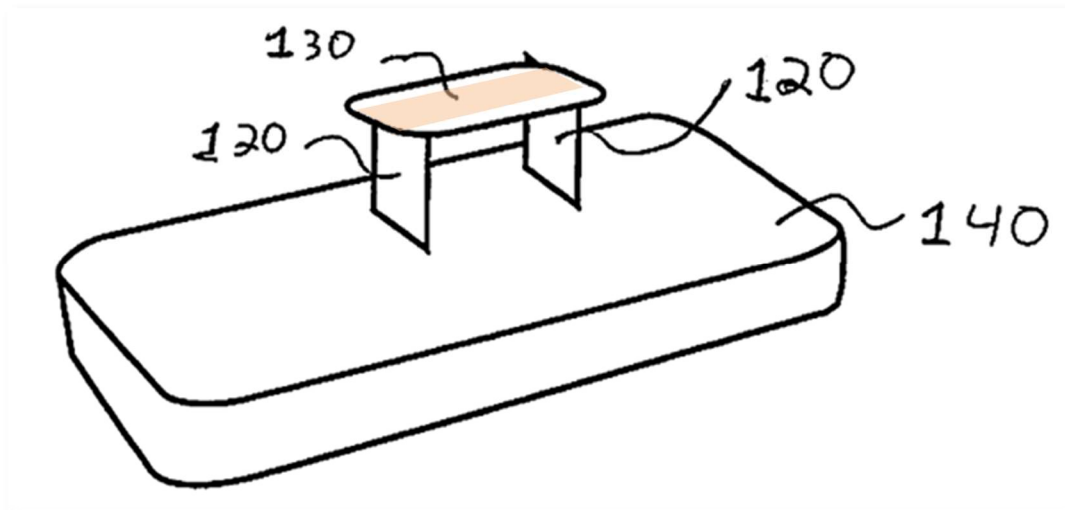
Claim 12

12. The stabilising device according to claim 1, wherein at least one of the first spacer element and the second spacer element is/are connected to a central portion of the unitary finger support member.

153. Karmatz discloses this claim. The first spacer element and second spacer element of Karmatz (extensions 120) are attached at pivot points that are connected to the central portion (**orange**, below) of the unitary finger support member (grip 130). This is depicted in Figure 23 of Karmatz:



EX1004, Fig. 23. Additionally, along the other axis:

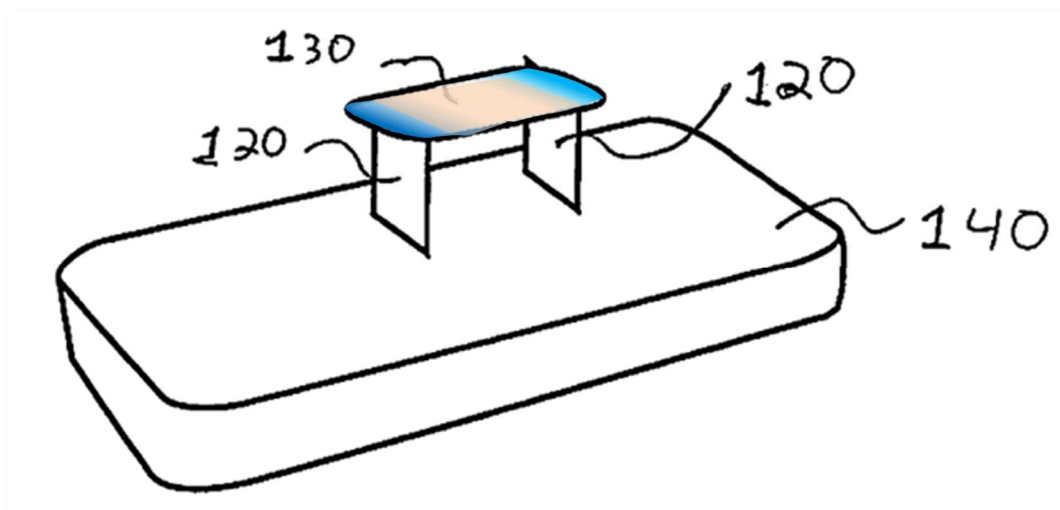


EX1004, Fig. 23 (annotated).

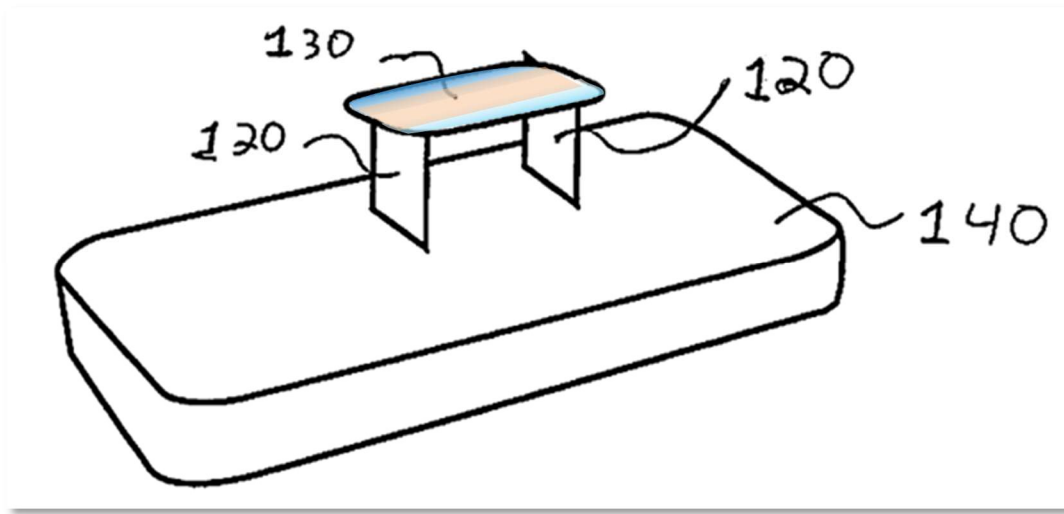
Claim 13

13. The stabilising device according to claim 1, wherein the unitary finger support member comprises first and second ends extending from opposite sides of a central portion thereof.

154. Karmatz discloses a **first end** (dark blue) and a **second end** (light blue) extending from opposite sides of a **central portion** of a unitary finger support member (grip 130).



EX1004, Fig. 23 (annotated). Further, Karmatz shows the grip 130 of Karmatz extends from opposite sides of the central portion of the unitary finger support member (grip 130) along its other axis, as well:



EX1004, Fig. 23 (annotated).

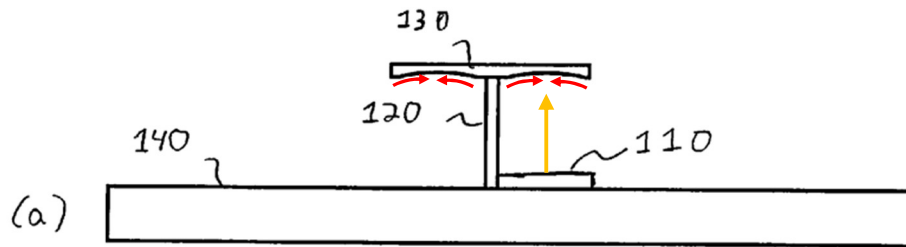
Claim 14

14. The stabilising device according to claim 13, wherein the unitary finger support member comprises guide means at an edge of the unitary finger support member.

155. Karmatz discloses a unitary finger support member (grip 130) that includes a guide means at an edge. For example, Karmatz discloses that its embodiments are “adapted to receive a portion of at least one finger inserted between the grip and the handheld device.” EX1004, Abstract; *and compare id. with* [0047] (“adapted to accommodate one or more fingers”). A person of skill in the art would understand Karmatz’s direction that the grip “receive” the user’s finger to indicate a gap or other contoured structure permitting the user to insert a finger under the edge of the unitary finger support member [grip 130]

and lift it to an open position. This is consistent as well with Karmatz's teachings that "a rectangular shape, [or] various other shapes, such as a circle, ellipse, or other regular or irregular shapes, *including ergonomic shapes designed to comfortably fit over a user's fingers*, may be used in accordance with embodiments of the present invention." EX1004, [0032] (referring to the grip 130 as an example of such a feature in accordance with the other embodiments of the present invention). Again, this disclosure by Karmatz informs that the *grip* 130 would be modified to include ergonomic features.

156. To the extent this is not explicitly disclosed by the foregoing, such a structure is necessarily included in the embodiments that do not include a spring-based release mechanism, as a POSITA would understand such structures necessary to lift the grip 130 from closed to open position. *E.g.*, EX1004, Figs. 23-25; *and* [0036]. In my opinion, this structure is expressly or inherently disclosed by Karmatz.
157. Additional implementations confirming and expanding upon the same disclosure are provided at, for example, Figure 8 (**red**):



EX1004, Fig. 8A. Karmatz clarifies that the grip 130 “may have contours corresponding to the curves of a user’s finger or fingers while they are positioned to hold the handheld device 140 while using the grip device.”

EX1004, [0032]; *see also id.* at Fig. 8, [0052], Claim 16.

158. Even if the limitations of Claim 14 were not expressly disclosed by Karmatz, a POSITA would understand that the use of “contours corresponding to curves of a user’s fingers” described by Karmatz would function as a “guide means” as required by Claim 14. Such contoured features included in grip 130 would serve to ensure the user’s finger are received and positioned properly in order to engage the grip and securely hold the handheld device, consistent with Karmatz’s teachings for the purpose of the grip. EX1004, [0010].

159. To the extent this limitation is not expressly or inherently disclosed, in my opinion Karmatz renders this limitation obvious. Consistent with the knowledge of the art (*see* Paragraph 44.c), Karmatz teaches the use of curved surfaces to provide ergonomic support and comfortably fit over a user’s

fingers. *See* EX1004, [0032]. From this demonstrated attention to ergonomic considerations, a POSITA would apply other ergonomic and mechanical features to improve the user's interaction with the grip of Karmatz, including at least the known direction in the art to 'break edges' (i.e., round them off) in order to increase the user's comfort. *See* Paragraph 44.c. Familiar with the disclosure of each embodiment, a POSITA would recognize that including a curved edge along the grip 130 would be necessary to both facilitate a user's engagement with and efforts to raise the grip 130 into an open position, and be motivated to include such a modification of the edge of the grip 130 of Karmatz in order to improve the ergonomic experience for the user. *Id.*

160. Thus, in my view, Karmatz anticipates or renders this claim obvious.

Claim 15

15. The stabilising device according to claim 14, wherein the guide means comprise at least one arcuate element arcing in a direction away from the base plate.

161. As above, Karmatz discloses that the unitary finger support member [grip 130] may include guide means in the form of curves corresponding to the user's finger, and further teaches grips an arcuate element arcing in a direction away from the base plate. For the same reasons as explained above with regard to Paragraph 161, in my opinion it would be obvious for a POSITA to

modify Karmatz to include arcuate elements arcing away from the base plate, because a POSITA would recognize that such curved edges as described by Karmatz and well-known in the art served to facilitate a user's engagement with and efforts to raise the grip 130 into an open position, and be motivated to include such a modification of the edge of the grip 130 of Karmatz in order to improve the ergonomic experience for the user. *See* Paragraph 44.c. This is further driven by the express instruction and knowledge in the art that "contact with sharp edges and corners can lead to discomfort" and should be rounded in order to improve user comfort. *See* Paragraph 44.c.

162. Thus, in my view, Karmatz anticipates or renders this claim obvious.

Claim 16

16. The stabilising device according to claim 1, wherein at least the base plate, the unitary finger support member and the first spacer element are integrally formed.

163. Karmatz discloses that the entire stabilising device disclosed therein, *see supra* Claim 1, can be integrally formed: "[T]he grip device may be manufactured by a single piece." EX1004, [0033]; EX1001, 4:31-35; *see also id.* at [0052]. To the extent it is found that Karmatz does not anticipate the limitation for "at least the base plate, the unitary finger support member and the first spacer element are integrally formed," and as explained above at

Paragraphs 67.d and 140, a POSITA would have been motivated to utilize injection molding techniques for fabrication of the grip of Karmatz, based on manufacturing efficiencies and cost savings, with predictable results. Such a technique would have resulted in a product wherein the unitary finger support member [grip 130], first spacer element [extension 120], and base [110] are integrally formed.

164. Thus, in my view, Karmatz anticipates or renders this claim obvious.

Claim 17

17. The stabilising device according to claim 1, wherein the base plate comprises one or more channels for guiding a user's fingers toward the unitary finger support member and the first spacer element.

165. Karmatz teaches that “[a]n underside of the grip 130 may be flat . . . or may have contours corresponding to curves of a user’s finger or fingers while they are positioned to hold the handheld device 140[.]” EX1004, [0032]. While this teaching places channels for guiding a user’s fingers on unitary finger support member (grip 130) rather than the base plate (base 110), it would have been trivial for a POSITA to apply the same teaching to the base 110 of any embodiment, including at least Figure 23. Such a modification would have been merely the application of the disclosed teaching of the base plate and applying it to the grip 130, which would be one of a set of finite set of possible

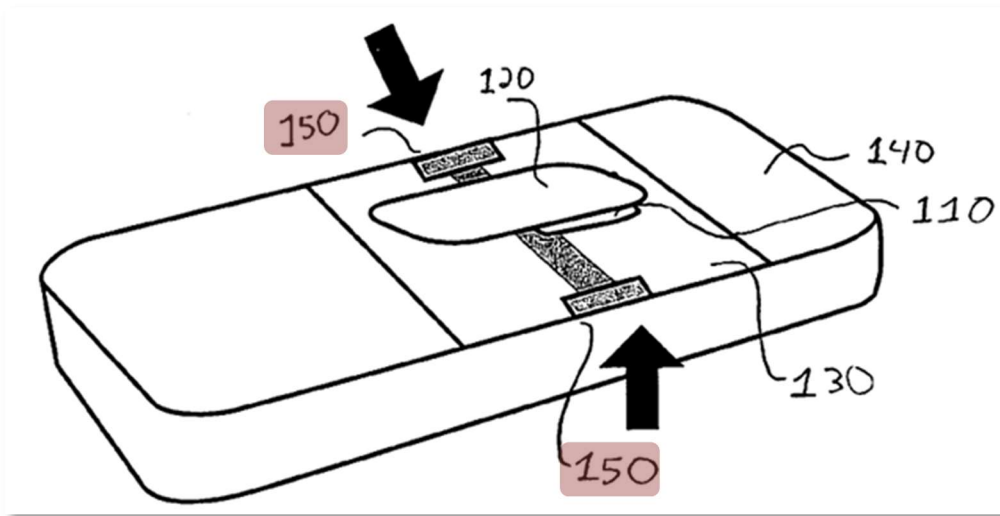
applications of the same knowledge, would provide for increased comfort and utility, and which would have results predictable to a POSITA. Further, a POSITA would have understood, based on the express teaching of Karmatz, that such contours would serve to guide the user's fingers toward the appropriate location between the unitary finger support member and the first spacer element (extension 120), facilitate engagement with the grip 130 in order to extend it into an open position, and would serve to improve Karmatz ability to securely hold the handheld device. *See* EX1004, [0010], [0052].

166. Thus, in my view, Karmatz renders this claim obvious.

Claim 18

18. The stabilising device according to claim 1, wherein the stabilising device further comprises a retaining element to secure the unitary finger support member in the closed position when not in use.

167. Karmatz discloses a retaining element (**latch mechanism** 150) that serves to “allow a user to open or close the device by pressing the grip device, or more specifically, the grip 130 of the grip device[.]” EX1004, [0039].



168. EX1004, Fig. 16; *id.* [0039] (regarding Figs. 14 through 17, “The mechanisms for opening and/or closing the device may be activated various latch mechanisms that would allow a user to open or close the device by pressing the grip device[...], and/or pressing a button, dial, lever, trigger device, or squeezing/pulling one or more sides, etc. located on the grip device or the handheld device 140.”). *And see id.*, [0041] (“When the spring 123 holds the grip device in the open position, a latch or other locking mechanism (not shown) may be used to hold the grip device in the closed position.”).
169. This teaching properly applies to other embodiments of Karmatz’s claimed invention, including at least Figure 23, in light of the explanation that Figures 11 through 17 illustrate “*locations* of various latch mechanisms 150 for initiating a mechanism for opening and/or closing the grip device in

accordance with *embodiments of the present invention*.” EX1004, [0039]. A POSITA would understand the teaching that figures merely indicate the location of latches for embodiments of the present invention to teach that the same locations would be applicable to other embodiments.

170. To the extent it is found that Karmatz does not anticipate this limitation, Karmatz additionally renders this limitation obvious in view of its various embodiments. As discussed above, Karmatz teaches that the base, extension(s), and grip of any embodiment may be interchanged with the base, extension(s) and grip of other disclosed embodiments. EX1004, [0052]. The incorporation of a latch element, including as above as depicted in Figure 16 as a modification or addition to the base 110, would conform to Karmatz’s instruction about the interchangeability of bases between embodiments. Here, a person of ordinary skill would be motivated to modify Figure 23 with the latch mechanism of the embodiment of Figure 16 in order to secure the grip mechanism when closed, consistent with Karmatz’s teachings that the grip device may be folded flat against the handheld device when not in use. *See* EX1004, Figs. 23-25.
171. Thus, in my opinion this claim is anticipated or rendered obvious by Karmatz.

B. Ground 1a: Karmatz in view of Grieve renders obvious.

172. In the alternative and in my opinion, Karmatz in view of Grieve further renders Claims 14, 15, and 17 obvious.¹⁹

Overview of Grieve

173. Grieve is entitled “TRAY AND DEVICE FOR STABILISING A TRAY.” EX1005, Title. It teaches a device used to stabilising device, which is attached to a drink tray and enables a tray bearer to support or stabilise the tray from underneath to reduce the risk of the tray tipping and spilling its contents. *Id.*, Abstract. An illustrative example of Grieve’s stabilising device is depicted in Grieve’s Figures 2 and 3.

¹⁹ I limit my discussion of Karmatz in view of Grieve to these claims in consideration of space and exposition, and certainly do not suggest that Karmatz in view of Grieve does not render the entirety of the ’691 Patent invalid as obvious.

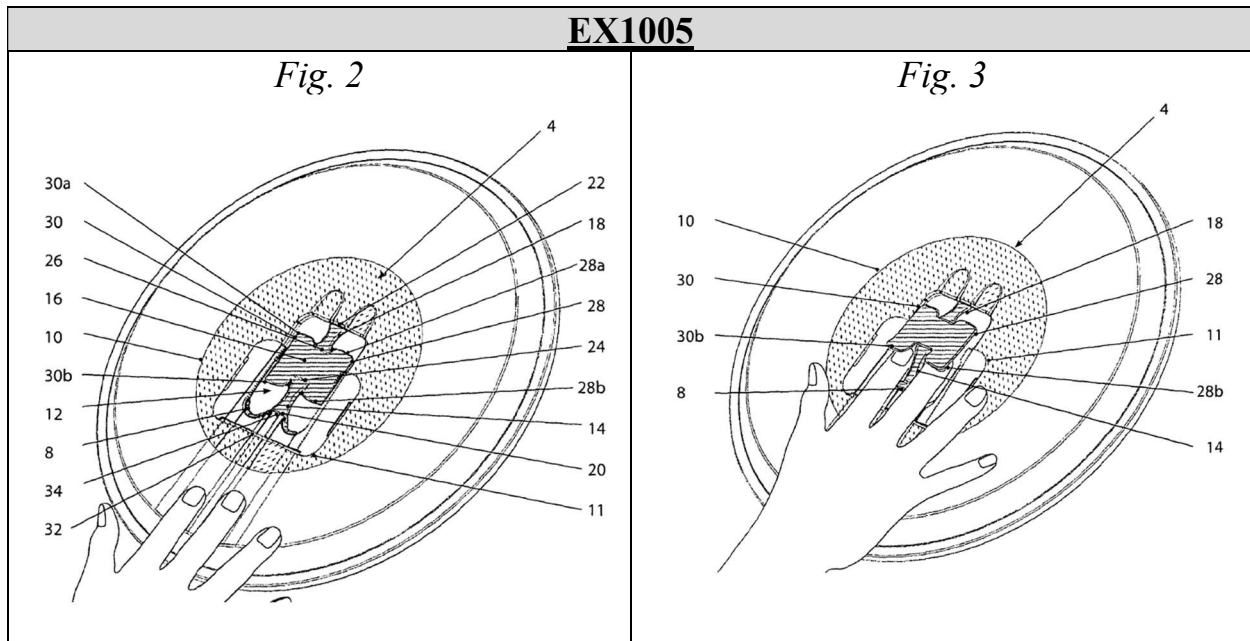
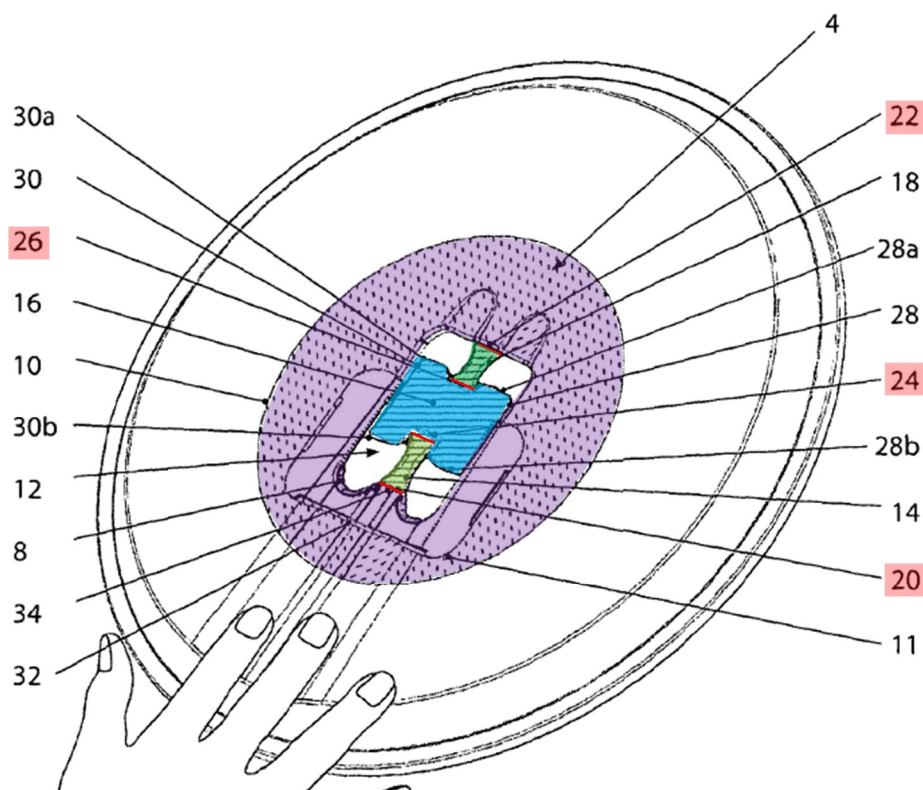


Figure 2 shows the device of Grieve in its closed position. *Id.*, 12:18-19.

Figure 3 shows the device of Grieve in which a user's fingers have begun to engage the device to open it. *Id.*, 12:21-23.

174. The device of Grieve includes a **base** member 10 and a **finger support member** 12. *Id.*, 13:16-17, 13:35-14:5. In the embodiments shown in Figures 2 and 3, the base member 10 and finger support member 12 are joined by **first** and **second spacer element** 14, 18, which are both pivotally connected to **base** member 10 and finger support member 12 at **pivot points** 20, 22, 24, and 26. *Id.*, 13:21-23, 13:34-14:2. The finger support member 12 is moveable between a closed position, in which the finger support member 12 is substantially flush with the base member 10, and an open position, in which

the finger support member 12 is spaced from the base plate so that a user can insert at least one finger between the base member 10 and the finger support member 12. EX1005, 5:15-16, 11:5-9, 11:22-25, 18:7-8; *see also id.*, Fig. 2:



175. Though Grieve is drawn to a stabilising device for a tray used in hospitality settings, its teachings are equally applicable to stabilising devices for portable computing devices, and a POSITA tasked with designing a stabilising device for a portable computing device would have, at the time of invention, naturally

looked to products where stability is critical, and would be inspired by ideas related to positioning of handling close to the center of gravity.

176. The interchangeability of stabilising grips across a variety of use cases was well known before April 26, 2013. As one example, U.S. Patent Publication No. 2012/0068043 to Daigle *et al.* (“Daigle”), disclosed a grip device for personal electronic devices (including tablet computers), but explains that “[a]lthough the holder systems are shown to support one or more personal electronic devices, ***the holder may be configured to support other electronic or non-electronic devices***, such as a clipboard, a blackboard, an artist palette, ***a tray***, etc.” EX1007, ¶57 (emphasis added) and Claim 1 (“An assembly for facilitating holding an electronic device, such as a tablet...”). A POSITA tasked with designing stabilising devices for the described portable computing devices knew and understood that such stabilising devices could be and ***were*** used on both trays and portable computing devices as well as other applications, and would know that moving the hand closer to the center of gravity would be beneficial to the stability. Even without the ordinary application of a POSITA’s knowledge of the field of endeavor, the disclosure in a single reference of the use of the same stabilising device for both trays and portable computing devices would have motivated a POSITA to look to

grips, stabilising devices generally, or other ideas related to positioning the hand closer to the center of gravity, rather than limit consideration to a stabilising device *limited* to the described personal computing device.

177. Upon reading Grieve, a POSITA would also have naturally understood how to modify the design disclosed therein for use with a portable computing device (or indeed, any object being held). The fact that the primary use case of Grieve is in connection with a tray does not mean that a POSITA tasked with improving the stability of an object being held or ergonomics relating to same (here, the described portable computing device) would not look to Grieve for its teachings directed to the positioning of the hand closer to the center of gravity, stability, and ergonomic improvements for handheld objects.
178. Grieve is from the same field of endeavor as the '691 Patent, namely, increasing the stability of an object being held. I understand that “it is necessary to consider ‘the reality of the circumstances’—in other words, *common sense*—in deciding in which fields a person of ordinary skill would reasonably be expected to look for a solution to the problem facing the inventor.” *In re Bigio*, 381 F.3d 1320, 1326 (Fed. Cir. 2004) (quoting *In re Oetiker*, 977 F.2d 1443, 1447 (Fed. Cir. 1992)) (emphasis in original); and *id.*

(“must consider the ‘circumstances’ of the application—the full disclosure—and weigh those circumstances from the vantage point of the common sense likely to be exerted by one of ordinary skill in the art in assessing the scope of the endeavor.”)

179. Based on the Applicant’s own submission, including through its information disclosure statements, common sense dictates that Grieve is from the same field of endeavor as the ’691 Patent. As a foundational note, I observe that the Applicant submitted the patent issuing from Grieve as prior art for consideration, and also submitted Daigle (EX1007) as prior art for consideration:

Substitute for Form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Complete if Known	
				Application No.:	Not Yet Assigned
				Filing Date:	Concurrently Herewith
				First Named Inventor:	Alison GRIEVE
				Group Art Unit:	Not Yet Assigned
				Examiner Name:	Not Yet Assigned
Sheet	1	of	1	Attorney Docket No.:	136724.02601

U. S. PATENT DOCUMENTS					
Examiner’s Initials	Cite No.	U.S. Patent Document Number Kind Code (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A1	2012/0228346 A1	Huang	09-13-2012	
	A2	2012/0048873 A1	Hyseni	03-01-2012	
	A3	8,794,686	Grieve	08-05-2014	

EX1002, at 11 (Oct. 23, 2015 Information Disclosure Statement).

Substitute for Form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Complete if Known	
				Application No.:	14/786,589
				Filing Date:	October 23, 2015
				First Named Inventor:	Alison GRIEVE
				Group Art Unit:	3652
				Examiner Name:	Not Yet Assigned
Sheet 1 of 1				Attorney Docket No.:	136724.02601

U. S. PATENT DOCUMENTS					
Examiner's Initials	Cite No.	U.S. Patent Document	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number Kind Code (if known)			
	A1	2004/0226973 A1	Kao	11-18-2004	
	A2	2011/0247959 A1	Nelson	10-13-2011	
	A3	2011/0279959 A1	Lopez	11-17-2011	
	A4	2011/0303709 A1	Wizikowski	12-15-2011	
	A5	2012/0025684 A1	Trotsky	02-02-2012	
	A6	2012/0068043 A1	Daigle et al.	03-22-2012	

EX1002, at 141 (Feb. 1, 2016 Information Disclosure Statement).²⁰

180. Daigle, as discussed previously, discloses an assembly for “holding an electronic device, such as a tablet” that can also be applied to “other electronic [and] non-electronic devices, such as a clipboard, a blackboard, an artist palette, *a tray*, etc.” EX1007, Abstract and ¶57 (emphasis added). Daigle thereby demonstrates the field of endeavor is appropriately broad enough to

²⁰ Only Grieve '686 was relied on by the Examiner through the prosecution of the application issuing as the '691 Patent. On my review, Daigle was not presented or discussed in any of the Examiner's Actions.

include grips and similar devices for (at minimum) both the described portable computing devices and hospitality trays (along with, e.g., clipboards, blackboards, palettes, etc.).

181. At minimum, Daigle confirms that design incentives and market forces would prompt variations of Grieve’s stabilising device in different fields such as grips for tablet computers. Here, where any inventive concept was limited to attaching the ‘stabilising device’ of Grieve to a different object (i.e., attaching it to a tablet computer instead of a tray), Daigle’s disclosure further confirms that Grieve is within the field of endeavor for the ’691 Patent. *And see In re Bigio*, 381 F.3d 1320, 1326 (Fed. Cir. 2004) (concluding Board appropriately placed a toothbrush within the field of endeavor of claimed hairbrush where “the structural similarities between [the two] would have led one of ordinary skill in the art working in the specific field of hairbrushes to consider ***all similar brushes*** including toothbrushes.” (emphasis added)). The structural similarities (and indeed, nearly identical disclosures and structures) of Grieve to the ’691 Patent would have a POSITA working in the field of ‘stabilising devices’ for tablet computers to consider all similar ‘stabilising devices’ – including Grieve. *Id.*

182. Additionally and alternatively, Grieve is analogous art to the claimed invention, because it is reasonably (indeed, explicitly) pertinent to the same issues purportedly addressed by the '691 Patent: improving stability and ergonomics of an object being held, and involving the repositioning of the grip close to the center of gravity. EX1005 (Grieve), 5:6-7; EX1007 (Daigle), ¶57; *and e.g.*, EX1002, at 261 (12/27/2016 Action, finding it obvious “replace the handle configuration as disclosed by Huang with the handle configuration of Grieve in order to provide a more ergonomic support which is easier to manufacture.”) and 297 (5/3/2017 Action, “[the issued patent of] Grieve teaches a stabilising device”). I understand that a reference is reasonably pertinent to the subject matter of an asserted patent if “a person of ordinary skill would have consulted it and applied its teachings when faced with the problem that the inventor was trying to solve.”
183. The '691 Patent states that “it can be unwieldy to manipulate and rotate [a] portable computing device and there exists a risk that the user may fumble the portable computing device, lose control of it and drop it[,]” and complains that the issue with known “protective cases [,] rigid carry handles, grips or straps for holding these devices” was that they were “bulky, and cumbersome for the end user, and do not allow a user to efficiently resist a rotational force

applied to the portable computing device.” EX1001, 1:41-43 and 44-47. Grieve discloses teachings directed to each of these problems, merely attached to a different device. *See* EX1005, 1:28-31 (issue with prior art “rigid handles” was “a rigid carrying handle to the underside of a tray, onto which the waiter or waitress can grasp. However, such an arrangement expends considerable energy, causing fatigue, and does not allow efficient stacking of like trays when not in use.”) *and id.* 17:17-19 (“a user can engage and brace his or her hand against the stabilising device in the open position so that tipping loads can be resisted.”).

184. In summation, the problem described by the '691 Patent was that known grips capable of stabilising and controlling the subject objects were too bulky and did not sufficiently permit resistance to a rotational force. Grieve, for its part, teaches a replacement for “rigid” and bulky handles and provides a device which can resist torque (i.e., a rotational force). *And see* EX1001, 1:36-49 (asserting issues with rigid and bulky prior art grips). Daigle confirms that, even if the POSITA’s would otherwise limit consideration of references outside grips for tablet computers, the POSITA would identified Grieve, and consulted and applied its teachings. *See* EX1007, ¶57. In my opinion, Grieve

is reasonably pertinent to the issue addressed by the '691 Patent, and is appropriately analogous art on this additional basis.

Motivation to Combine Karmatz and Grieve

185. A POSITA would have been motivated to improve the teachings of Karmatz through the disclosures of Grieve.
186. Both references are analogous art to the '691 Patent. *See* Paragraphs 57-58 above (Karmatz); Paragraphs 175-184, above (Grieve).
187. First and summarizing for context the discussions above, both Karmatz and Grieve are explicitly pertinent to improving stability. *See* EX1004 (Karmatz), [0047] (“The plurality of extensions 130 ***provide additional stability***[.]”); *see also* EX1004, [0006], [0010]; EX1005 (Grieve), 1:5-6 (describing a device for ***stabilising the tray*** when being carried), 1:29-31, 15:6-9. A POSITA charged with improving the stability of the described portable computing device would have been familiar with principles related to the positioning of the hand relative to the center of gravity and ergonomic techniques generally, and would have consulted grips, handles, holders/holds, and other structures in other contexts for their teachings. *And see* Daigle, EX1007, ¶57 (teaching use of disclosed holder system for “electronic and non-electronic devices, such as a clipboard, a blackboard, an artist palette, a tray, etc.”); *see also*

Paragraphs 72, 80 at Table 3, and 175. A POSITA would have consulted Grieve for its teachings for improved stability and used the same teachings to improve Karmatz. *See id.* In my opinion, both Karmatz and Grieve are pertinent to the issue of improving the stability of the described portable computing devices.

188. Second, both Karmatz and Grieve are explicitly pertinent to ergonomic issues implicated by holding an object. *E.g.*, EX1004 (Karmatz), [0029] and [0032] (ergonomic considerations for form of grip device); EX1005 (Grieve), at 1:28-36 (noting prior art solutions require expenditure of “considerable energy, causing fatigue” and presenting claimed solution). A POSITA charged with improving the ergonomic use of the described portable computing device would readily consult both Karmatz and Grieve, based on the known application of such techniques to both fields. *See* EX1007, ¶57 (teaching use of disclosed holder system for “electronic and non-electronic devices, such as a clipboard, a blackboard, an artist palette, a tray, etc.”). A POSITA would have consulted Grieve for its teachings for improved ergonomics and used the same teachings to improve Karmatz. *See id.* This would also be motivated for numerous reasons, including at least based on the known interchangeability of grips for both tablets and trays (EX1007, ¶57) and as an application of

known techniques for improving stability and ergonomics by affixing a grip at the center of gravity for an object with predictable results and expected success. In my opinion, both Karmatz and Grieve are pertinent to the issue of improving ergonomic use of the described portable computing devices.

189. Based on these similarities, a POSITA looking to improve Karmatz would not hesitate to look to the teachings of Grieve and apply those teachings in part or in full, resulting in the claimed devices of the '691 Patent.

Claim 14, 15, and 17

14. The stabilising device according to claim 13, wherein the unitary finger support member comprises guide means at an edge of the unitary finger support member.

15. The stabilising device according to claim 14, wherein the guide means comprise at least one arcuate element arcing in a direction away from the base plate.

17. The stabilising device according to claim 1, wherein the base plate comprises one or more channels for guiding a user's fingers toward the unitary finger support member and the first spacer element.

190. In addition to the opinions above regarding Karmatz's disclosure of Claims 14, 15, and 17, these claims are further rendered obvious by the combination of Karmatz in view of Grieve. Consistent with the discussion above, incorporation of Grieve to further include or amplify teachings of Karmatz by incorporating the similar structures disclosed and taught by Grieve would

serve to increase the stability and ergonomic benefits of Karmatz, and would result in the claimed embodiment.

191. The subject claims disclose a number of features focused upon facilitating the user's engagement with the 'stabilising device' of the claims of the '691 Patent, including a "guide means at an edge of the unitary finger support member" (Claim 14), wherein the "guide means comprise at least one arcuate element arcing in a direction away from the base plate" (Claim 15), and a further configuration wherein the base plate includes "one or more channels for guiding a user's fingers towards the unitary finger support member and the first spacer element" (Claim 17). Karmatz discloses or renders obvious these configurations. *See* Paragraphs 155 – 161 and 165, above. Alternatively, these claims would be obvious in view of POSITA's knowledge of the art and motivated by the express instruction and knowledge in the art that "contact with sharp edges and corners can lead to discomfort" and should be rounded in order to improve user comfort, leading POSITA to apply arcuate elements to the edges of the guide means as claimed as instructed by knowledge in the art, with predictable results (improved comfort) and expected success. *See* Paragraph 44.c.

192. The disclosure of Grieve echo and enlarge the teachings of Karmatz, disclosing the language of the subject claims of the '691 Patent verbatim or nearly so:

14. ... wherein the unitary finger support member comprises guide means at an edge of the unitary finger support member.	"The finger support member may comprise guide means at an edge of the finger support member." EX1005, p.3
15. ... wherein the guide means comprise at least one arcuate element arcing in a direction away from the base plate.	"The guide means may comprise at least one arcuate element arcing in a direction away from the underside of the tray." EX1005, p.3
17. ... wherein the base plate comprises one or more channels for guiding a user's fingers toward the unitary finger support member and the first spacer element.	"The ... base member may comprise one or more channels for guiding a user's fingers toward the device." EX1005, at p.3

193. The teaching to include channels in for guiding a user's finger toward the grip device (Claim 17) would further be motivated by a POSITA in view of the fact the grip device would often be on the far side of the handheld device (i.e., opposite the device's screen), such that a POSITA would identify and look for solutions to provide tactile feedback permitting the user to engage the grip device without visual feedback. Including such a tactile guide would be known based on Karmatz's disclosures, and one of finite variations (including the guide on the top of the grip interface [under the grip] or the bottom of the

grip interface [as part of the base plate]), and would have had predictable results and expected success.

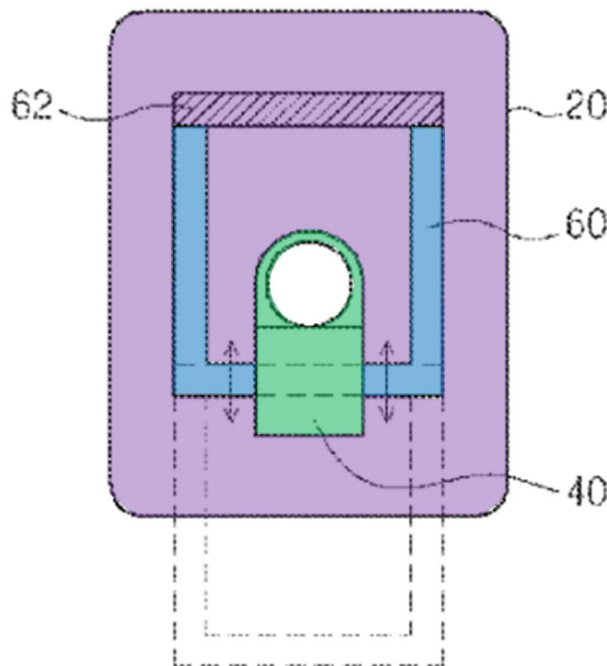
194. As shown above, Karmatz and Grieve are both analogous art to the '691 Patent. A POSITA would have been familiar with both references, and considered and applied their teachings to creating an improved stabilising device/grip based on the concerns identified by Karmatz.
195. Incorporating these teachings of Grieve to enhance the teachings of Karmatz (including as to Figure 23) would result in a grip device with guide means at an edge of the unitary finger support member (grip 130), an arcuate element arcing away from the base plate, and further include channels to guide the user's fingers toward the unitary finger support member and the first spacer element. *See* EX1005, p.3. These modifications would be obvious to include and to try based on Karmatz's instruction that it would "be understood by those skilled in the art that various changes in form and details may be made therein without departing from the spirit and scope of the invention" (EX1004, [0053]) and in would be in keeping with Karmatz's teachings for a grip providing stability and ergonomic support for the user. *See* EX1004, [0047]; *and id.* [0010], [0029], [0032].

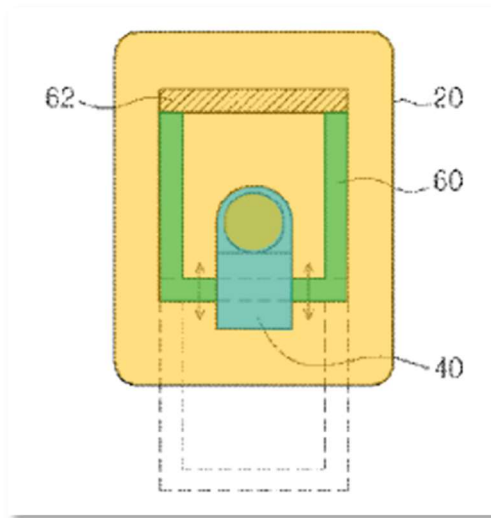
C. Ground 1b: Karmatz in view of Noh renders Claim 19 obvious.

19. The stabilising device according to claim 1, wherein at least one of the base plate, the unitary finger support member and/or the first spacer element is configured to be releasably secured to a display bracket.

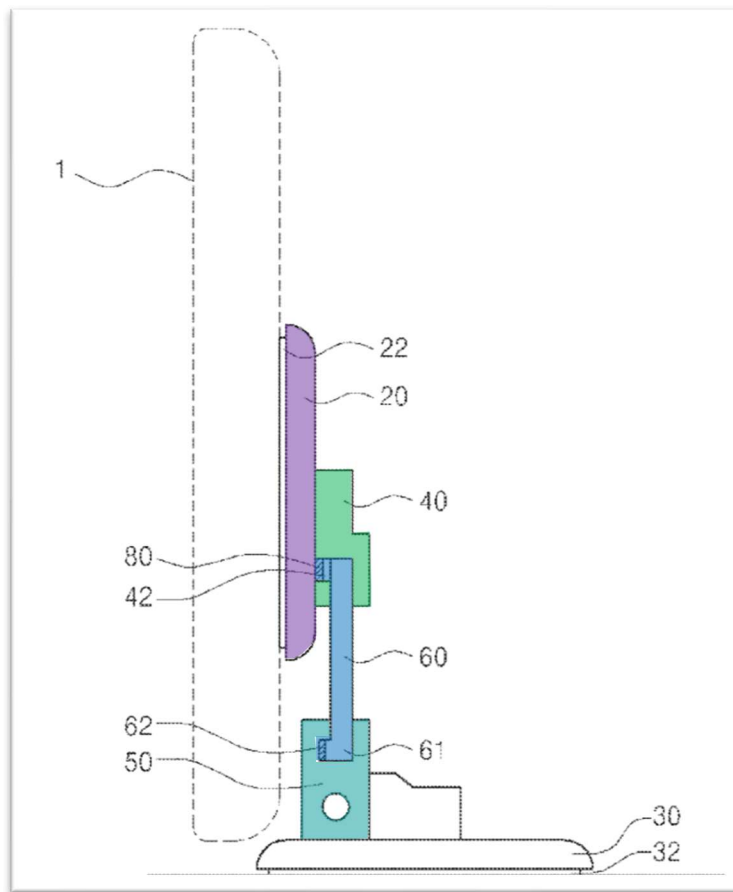
196. In my opinion, Karmatz in view of Noh renders Claim 19 obvious.

197. Noh is entitled “MULTIFUNCTIONAL ACCESSORY FOR PORTABLE DEVICE.” EX1006, cover. It teaches, *inter alia*, a “stabilising device” that includes the same elements as Karmatz (*e.g.*, a “base plate” (**main body** 20), a “finger support member” (**rotatable ring** 60), a “spacer element” (**rotatable bracket** 40)). EX1006, [0017], [0023], [0027], [0044]. These elements are depicted in Figure 4(b) of Noh:





EX1006, Fig. 4(b); *see also id.*, [0017], [0023], [0027], [0044]. Noh also teaches that at least one of these elements can be releasably secured to a display bracket (**pivotable bracket 50**) as shown, for instance, in Noh's Figure 5:



EX1006, Fig. 5; *see also id.*, [0017], [0023], [0025], [0027], [0050] (explaining that pivotable bracket 50 “has a receiving groove (52) for receiving and supporting the bent protrusion of the rotatable ring (60)[.]”).

198. Noh is analogous art. First, Noh is from the same field of endeavor as the '691 Patent, namely, increasing the stability of an object being held. *See* EX1006, at [0002] (discussing tablet PCs as a form of “portable multimedia device[.]”) and [0052] (“Furthermore, the portable can be stably used even on the inclined surface or shaking place such as vehicle’s dashboard by using an

auxiliary device.”); *and e.g.*, EX1001, at Title and 1:23-24 (defining “portable computing device” as “tablet computers, or tablets”). Since both Noh and the ’691 Patent are directed to improving the stability of an object, and even more narrowly to improving the stability of a tablet computer being held, in my opinion Noh is within the same field of endeavor.

199. Noh is alternatively and additionally analogous art to the claimed invention, because it is reasonably pertinent to the same issues purportedly addressed by the ’691 Patent: improving the stability and ergonomics of an object being held and shifting the point of contact near to the center of rotation. EX1006, at [0002] and [0052] (“the portable [device] can be stably used even on the inclined surface or shaking place such as vehicle’s dashboard using an auxiliary device.”). In my opinion, the teachings of Noh would be reasonably pertinent to a POSITA tasked with designing a stabilising device.
200. Based on and building on these points, a POSITA would have been motivated to use the teachings of Noh to modify Karmatz in order to enhance the Karmatz grip’s ability stabilise a portable computing device through use as a stand on various surfaces. This motivation would have been particularly strong in view of the disclosures of Karmatz and the purpose of Karmatz’s grip. For instance, Karmatz teaches that the grip device in an open position

may be placed on a “surface such as a table with a grip 130 resting on the table such that a user may easily access a display and/or controls on a side of the handheld device 140 while the handheld device 140 is resting on the table[.]” EX1004, [0045]. A POSITA would have recognized the benefit of Karmatz’s directive as to all embodiments, including at least Figure 23, in view of its teachings that handheld devices might be used in a landscape viewing orientation (*see* EX1004, Claim 18) and the disclosed utility of using grip devices as a stand for use when “placed on a surface such as a table with a grip 130 resting on the table[.]” EX1004, [0045]; *and* [0018] (noting use of embodiment as a stand on a table).

201. A POSITA would enlarge and improve these teachings of Karmatz by incorporating a display bracket as taught by Noh as a combination of prior art based on known methods with a predictable results (*e.g.*, facilitating the mounting and use of the claimed portable computing device) and as use of a known technique (the use of a display bracket) to improve the existing product. The combination would have been obvious to try and a reasonable variation of known work in the field. *See* EX1004, [0052].
202. The resulting modification would result in the claimed device, leaving Claim 19 obvious based on Karmatz in view of Noh.

D. Ground 2: Grieve, alone or in view of Karmatz, renders Claims 1-18 and 20 obvious.

203. Based on the following, it is my opinion that:

- a. Grieve, alone or in view of Karmatz, renders obvious claims 1-18 and 20

as of April 26, 2013.

Motivation to Modify Grieve

204. Though Grieve is drawn to a stabilising device for a tray used in hospitality settings, its teachings are equally applicable to stabilising devices for portable computing devices, and a POSITA tasked with designing a stabilising device for a portable computing device would have, at the time of invention, naturally looked to grips designed in other use cases for inspiration. The interchangeability of stabilising grips across a variety of use cases was well known before April 26, 2013.

205. As one example, U.S. Patent Publication No. 2012/0068043 to Daigle *et al.* (“Daigle”), discloses a grip device for personal electronic devices, but explains that “[a]lthough the holder systems are shown to support one or more personal electronic devices, *the holder may be configured to support other electronic or non-electronic devices*, such as a clipboard, a blackboard, an

artist palette, *a tray*, etc.” EX1007, ¶57 (emphasis added); *and id.* [0058] (“The cover is form-fitted for receiving an electronic device, such as an iPad, or other tablet, etc. and is secured by edge wrap”). A POSITA tasked with designing stabilising devices for portable computing devices knew and understood that such stabilising devices could be and *were* used on both trays and portable computing devices as well as other applications, establishing that Grieve is in the same field of endeavor as the alleged invention of the ’691 Patent. Even setting aside the analogous art discussion above at Paragraphs 175 to 184, the teaching in Daigle of the use of the same apparatus as a grip for both trays and portable computing devices would have taught and motivated a POSITA consider stabilising devices from a broad swath of use cases. EX1007, ¶57.

206. Based on Grieve, a POSITA would also have naturally understood how to modify the design disclosed therein for use with a portable computing device (effectively and for the vast majority of limitations discussed below, by

applying it to a tray rather than the described portable computing device).²¹

And see EX1007, ¶57. The fact that the primary use case of Grieve is in

²¹ I further note, as discussed above, that Karmatz discloses a removable grip device, which would be readily re-attached to a tray by a POSITA with effectively no effort much less undue experimentation, and which process would be entirely within their skill, and would result in the claimed invention as set forth in my opinions. Even without the presumed knowledge of a POSITA, a POSITA would understand such an intersection to occur where tablets and trays were used. For example, before the claimed priority date of the '691 Patent, there were teachings in the art directed to the use of tablet computers as an interface for ordering food in restaurants. *E.g.*, EX1010 (U.S. Patent Publication No. 2011/0047583 to Howard et al.), at 1 and [0093] (claiming priority of February 17, 2010, “In another embodiment, the MobileMedia System is utilized to provide a digital menu, *such as a restaurant menu...*The users may use a touch screen of *the tablet* to order food, request the bill, play interactive games, etc.” (emphasis

connection with a hospitality tray does not mean that a POSITA tasked with improving the ergonomics or stability of an object being held (here, the described portable computing device) would not look to Grieve for its teachings directed to stability and ergonomic improvements for handheld objects. Grieve is analogous art to the claimed invention, because it is reasonably (indeed, explicitly) pertinent to the same issues purportedly addressed by the '691 Patent: improving the stability and ergonomics of an object being held, and involving the repositioning of the grip close to the center of gravity. EX1005, 5:6-7; EX1007, ¶57. In my opinion, it would be

added.); EX1011 (U.S. Patent Publication No. 2013/0166401 to Algozer *et al.* (claiming priority to Dec. 28, 2011 for realtime integrated shopping service using tablet computers, explaining that “one or more tablet computers can be used by the restaurant employees to communicate with the restaurant server 34.”).

A person of skill in the art, understanding the confluence of use cases for both hospitality trays and electronic devices, would have readily seen the applicability of Grieve to the described portable electronic device.

obvious to apply the teachings of Grieve's stabilising device to a portable computing device.

207. While the foregoing discussion is incorporated (but not repeated) into each limitation relating to Grieve below, I present additional motivations to modify Grieve in order to arrive at the claimed devices as appropriate.

Motivation to Combine Grieve and Karmatz

208. As discussed above, Grieve and Karmatz are analogous art to the alleged invention of the '691 Patent. *See* Paragraphs 175-184, above (Grieve); Paragraphs 57-58 above (Karmatz). Summarizing for context my earlier discussion, both are analogous art at least because they are from the same field of endeavor as the alleged invention of the '691 Patent: improving stability for an object being held. *See* EX1005 (Grieve), 1:5-6 (describing a device for ***stabilising the tray*** when being carried), 1:29-31, 15:6-9; EX1004 (Karmatz), [0047] ("The plurality of extensions 130 ***provide additional stability***[.]"); *see also* EX1004, [0006], [0010]. Moreover, and in response to the Applicant's assertion that the '691 Patent was concerned with "provid[ing] a more ergonomic support for a tablet computer[.]" a POSITA would have understood Karmatz and Grieve to both be reasonably pertinent to improving the ergonomics of grips, handles, and the like. Further, a POSITA would have

understood that Karmatz and Grieve are reasonably pertinent to stabilising through the repositioning of the grip close to the center of gravity EX1007, ¶57. Based on these similarities, a POSITA looking to adapt Grieve for use with personal computing devices would not hesitate to look to the teachings of Karmatz and apply those teachings in part or in full, resulting in the claimed devices of the '691 Patent.

209. This adaptation (which in most cases comprises mere application of the 'stabilising device' of Grieve to a new object, i.e., a tablet computer) would be motivated as a simple combination of prior art elements according to known methods (a stabilising device of Grieve and features thereof, applied to a tablet as taught by Karmatz or otherwise motivated by the knowledge in the art), as the substitution of one structure (Karmatz's grip device) with a related structure (Grieve's disclosure) to yield a predictable result, and as use of a known design (Grieve) to improve Karmatz's structurally similar design. The combination would also be motivated based on the teaching, suggestion, and motivation informed by Daigle that the same grip can be used on electronic devices (such as tables) and hospitality trays. EX1007, ¶57.

Finally, the profound structural similarities between Grieve and the '691 Patent show that Grieve would have been reasonably pertinent.²²

210. In short, in my opinion a POSITA would be motivated to modify Grieve based on the teachings of Karmatz, including at minimum by modifying Grieve by attaching it to the described portable computing device per Karmatz.

Claim 1

Claim Element 1p

[1p] A stabilising device for a portable computing device, the stabilising device comprising:

211. Assuming the preamble is limiting, Grieve teaches a stabilising device for a portable computing device. *And see* Paragraphs 204-206, above.

²² *See In re Ellis*, 476 F.2d 1370, 1372 (CCPA 1973) (“Here the structural similarities and functional overlap between the structural gratings shown by one reference and the shoe scrapers of the type shown by another reference were readily apparent, and therefore the arts to which the reference patents belonged were reasonably pertinent to the art with which appellant’s invention deals [pedestrian floor gratings.]”).

212. Both Grieve and the '691 Patent discuss use of a “stabilising device” to use a tray or portable computing device, respectively, without loss of control. *Compare* EX1005, 10:10-12 (“In this manner, the tray bearer can safely transport drinks or food to a table with a reduced risk of the contents of the tray being spilled”) *with* EX1001, 10:59-63 (“a user can safely hold a portable computing device contained within cover of casing 6 and effectively resist rotation of a portable computing device contained within cover of casing 6 without risk of fumbling or dropping the device.”). The '691 Patent even describes use of the described apparatus to increase stability of a tray – just like Grieve. *See* EX1001, 9:38-41.
213. As explained above, it would have been obvious to apply the stabilising device of Grieve to the claimed portable computing device. Both Grieve and the '691 Patent discuss use of a “stabilising device” to use with a tray or portable computing device, respectively, without loss of control. *Compare* EX1005 (Grieve), 10:10-12 (“In this manner, the tray bearer can safely transport drinks or food to a table with a reduced risk of the contents being spilled”) *with* EX1001, 10:59-63 (“a user can safely hold a portable computing device contained within cover of casing 6 and effectively resist rotation of a portable

computing device contained within cover of casing 6 without risk of fumbling or dropping the device.”).

214. I discussed the term ‘stabilising device,’ and the disclosure of stability and ergonomic considerations in connection with Karmatz and the Applicant’s assertions during prosecution, above. *See* Paragraphs 69-80, above. I incorporate the general discussion here without repeating. To the extent “stabilising device” is a limitation on the claims of the ’691 Patent, Grieve discloses the stabilising device of the ’691 Patent. Grieve explains that its stabilising device “enables a tray bearer to support or stabilise the tray.” EX1005, at Abstract.

215. As I have explained above, a POSITA tasked with designing a stabilising device for the described portable computing device would have been aware of Grieve. Such a POSITA would readily recognize the applicability of the stabilising device of Grieve for use in other contexts. *And see* EX1007 (Daigle), ¶57. A POSITA would have been motivated to modify Grieve by applying it the described portable computing device rather than to a tray. The modification would have been obvious both as a predictable variation of work in the same (or different, if it is determined Grieve was not within the same field of endeavor) with no identifiable impediments or challenges in its

implementation. Indeed, a POSITA would merely be applying the stabilising device of Grieve from one flat surface (the underside of a tray) to another (typically) flat surface (the back side of a tablet computer). The use of Grieve's known technique for stabilising an object being held would improve a tablet being held in the same ways, and would have been entirely within the skill of a POSITA for the same reasons. In my view, and to the extent limiting, Grieve renders application of its 'stabilising device' to a portable computing device obvious.

216. Based on the foregoing, it would have been obvious to apply the "stabilising device" of Grieve to the claimed portable computing device. *See* EX1007, ¶57.

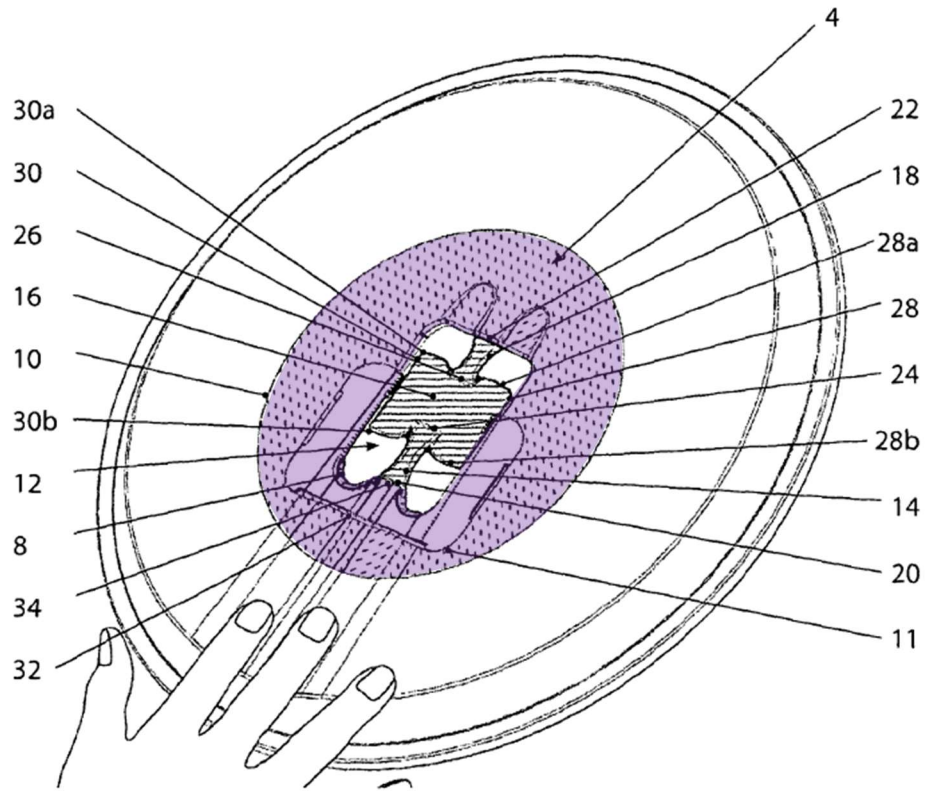
Claim Element 1a

[1a] a base plate configured to be mounted on the portable computing device and rotatable relative to the portable computing device;

217. Application of Grieve to a portable computing device, as discussed above and consistent with Daigle (EX1007), renders this limitation obvious. A POSITA at the time of the claimed priority date would be familiar with the nature of tablet computers, and specifically, that tablet computers offer the ability to view in both portrait and landscape mode. *E.g.*, EX1007, [0059] (establishing

knowledge of portrait and landscape modes in art, “a person can grip or hold onto the handle with one hand and rotate the electronic device or tablet with the other hand thereby moving the electronic device as desired, into the portrait or landscape positions.”); EX1007, ¶ 57 (teaching application of grips to both portable computing devices and trays); *and* [0009]-[0010] (identifying and improving prior art concern that shifting grip could result in dropping device), [0036].

218. A POSITA would appreciate and design a stabilising device in order to retain and account for such functionality by permitting the grip to rotate. Such a motivation would be driven by design incentives and market forces (i.e., the rotatability of the portable computing device and resulting design incentive to account for such rotation), and would additionally be a predictable variation of work in the field readily within the skill of the POSITA. *And see* Paragraphs 44.d and 67.b; EX1009, 1:43-46 and 1:54-57. In my opinion, modifying Grieve to include the rotatability limitation would be obvious to a POSITA.
219. Grieve discloses a “base plate configured to be mounted” (**base member 10**):



EX1005, Fig. 2 (annotated).

220. Based on the foregoing, it would have been obvious to modify Grieve to arrive at this limitation.

221. Alternatively, Karmatz discloses the limitations of Claim Element 1a. *See supra* Count 1, Claim 1, Claim Element 1a. Further to my discussion above (Paragraphs 212-215), a POSITA, understanding the applicability of the “stabilising device” of Grieve to other analogous use cases (here, application to the claimed portable computing device to enhance stability and/or

ergonomics) would have readily appreciated the need to modify the grip to rotate as taught by Karmatz in order to avoid causing (1) the user to reposition their grip (thereby reducing stability) and/or (2) attempt to rotate their hand at an unnatural angle to view content on the claimed portable computing device when the profile changed from portrait to landscape or vice versa. *See* EX1007, ¶57 (teaching application of grips to both portable computing devices and trays); *and* [0009]-[0010] (identifying and improving prior art concern that shifting grip could result in dropping device), [0036] (grip device helps avoid need to reposition grip while using device). As I discussed above at Paragraph 44.d, such a modification or combination would have been motivated for multiple reasons, including at least based on market forces and design pressures based on the market trend for devices offering screen displays and keyboards that alternated between a relatively vertical and relatively horizontal orientation. EX1009, 1:26-28 and 1:43-46; *see* Paragraphs 44.d and 122, above. A POSITA would have been aware of these market trends, and recognized the need to include such rotatability through the base plate of the grip of Grieve in order to permit use of the device while transitioning without dropping the device, with predictable results and expected success. Adding such rotatability to the “stabilising device” of

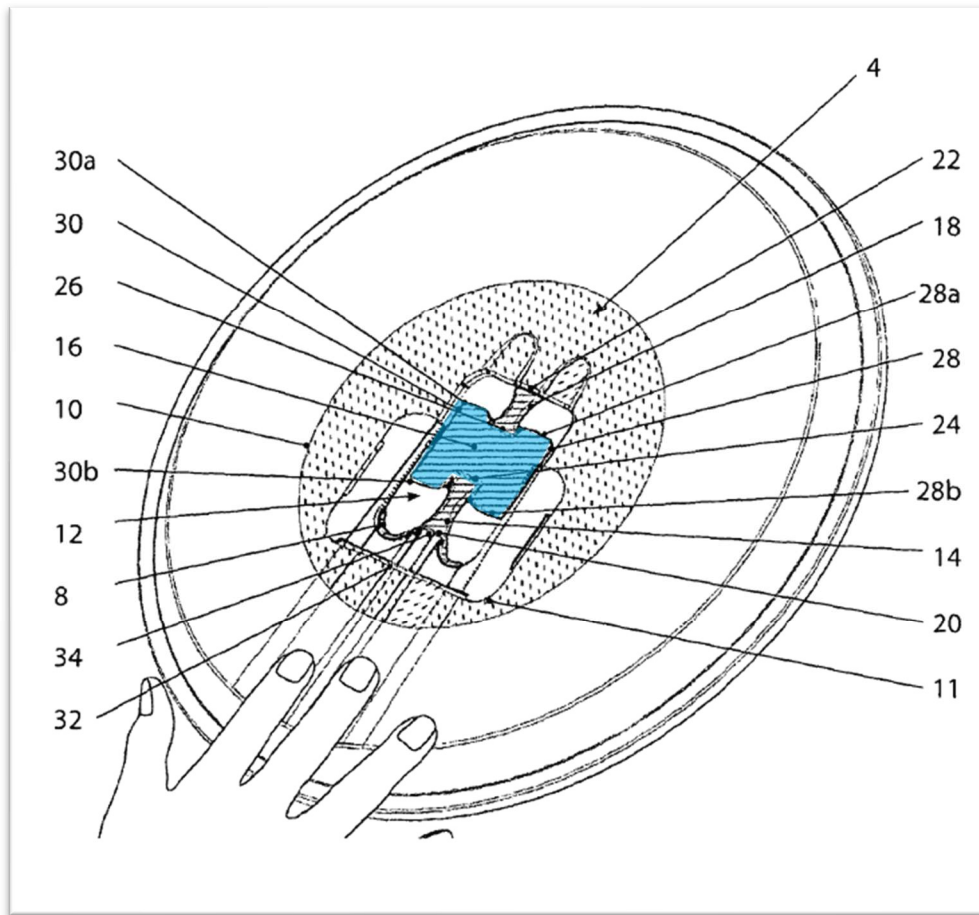
Grieve was well within the skill of the art and would be motivated by the realities of the specified use case with predictable results. EX1003.

222. In my opinion, to the extent limiting and in addition to my opinions regarding Karmatz discussed above, Grieve alone or in view of Karmatz renders the preamble of Claim 1 obvious.

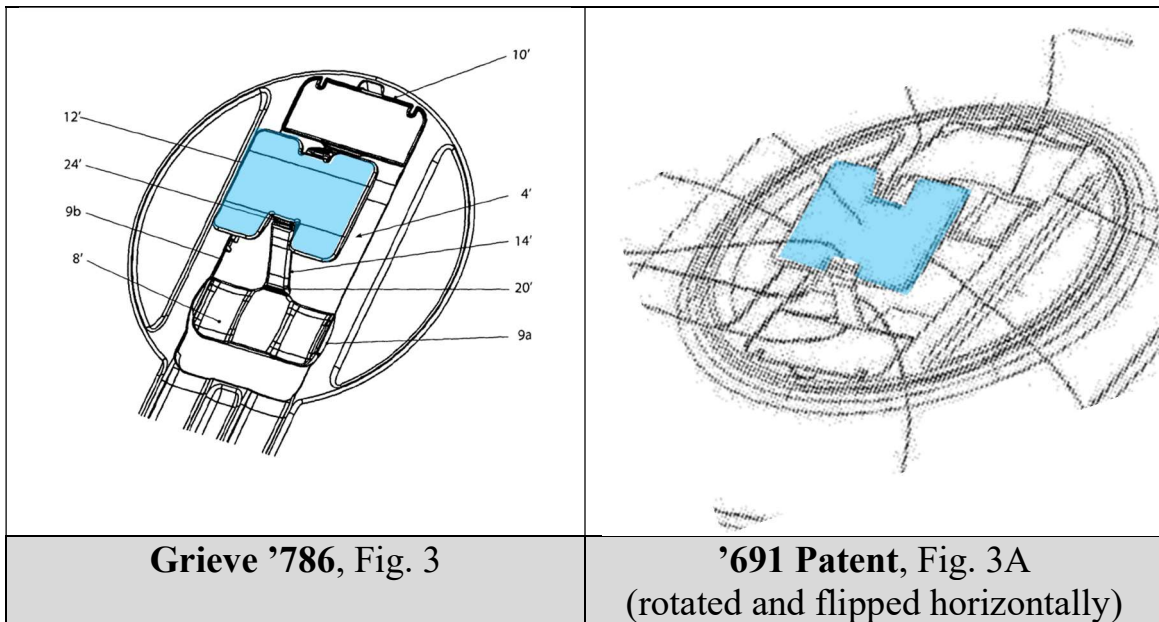
Claim Element 1b

[1b] a unitary finger support member;

223. This element is taught by Grieve as “**finger support member 12**”:



EX1005, Fig. 2 (annotated). Moreover, a POSITA would understand that the “finger support member” of Grieve to expressly disclose the “unitary finger support member” of this limitation:



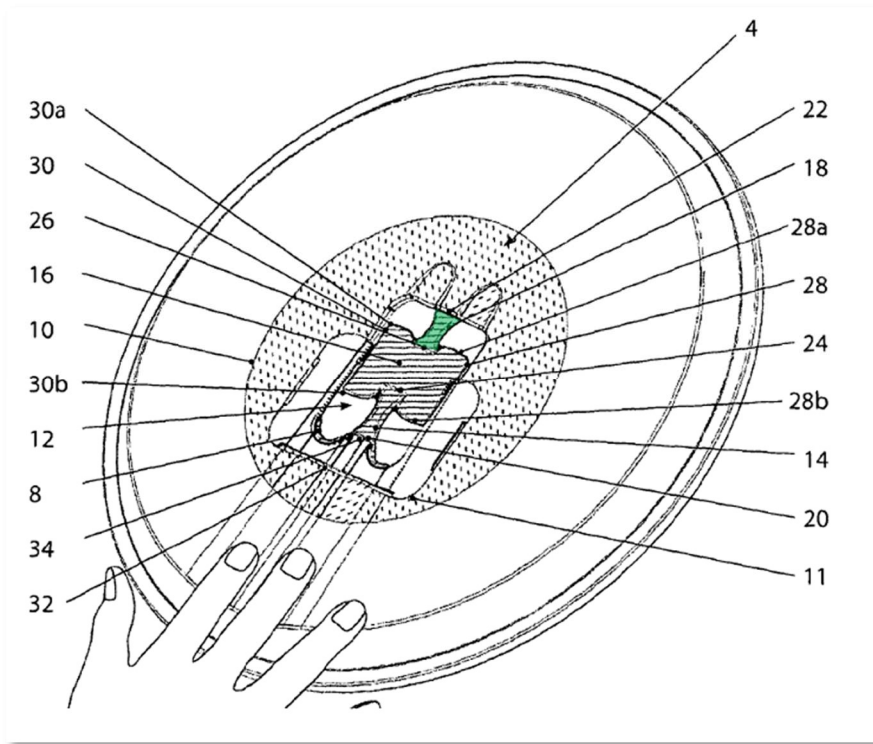
224. Grieve further discloses that the “unitary finger support mechanism” serves as a “brace” against which the user “can brace his or her fingers.” EX1005, 6:10-11.
225. In my opinion, Grieve discloses this limitation.

Claim Element 1c

[1c] a first spacer element connected to the unitary finger support member and to the base plate; and

226. This limitation is disclosed by Grieve as “**second spacer element** 18²³,”
which is connected to the unitary finger member and to the base plate:

²³ While the numeration associated with the first and second spacer elements would be understood to be arbitrary and interchangeable to a person of ordinary skill in the art, the identified elements are selected to conform to Claim 9’s limitation relating to a “slidable element.”



EX1005, Fig. 2 (annotated), 7:34-36 (“The device may also comprise a further spacer element connected to the finger support member. The further spacer element may be a second spacer element or a third spacer element.”), 13:22-14:2 (“A second spacer element is pivotally connected to base member 10 at pivot point 22.”).

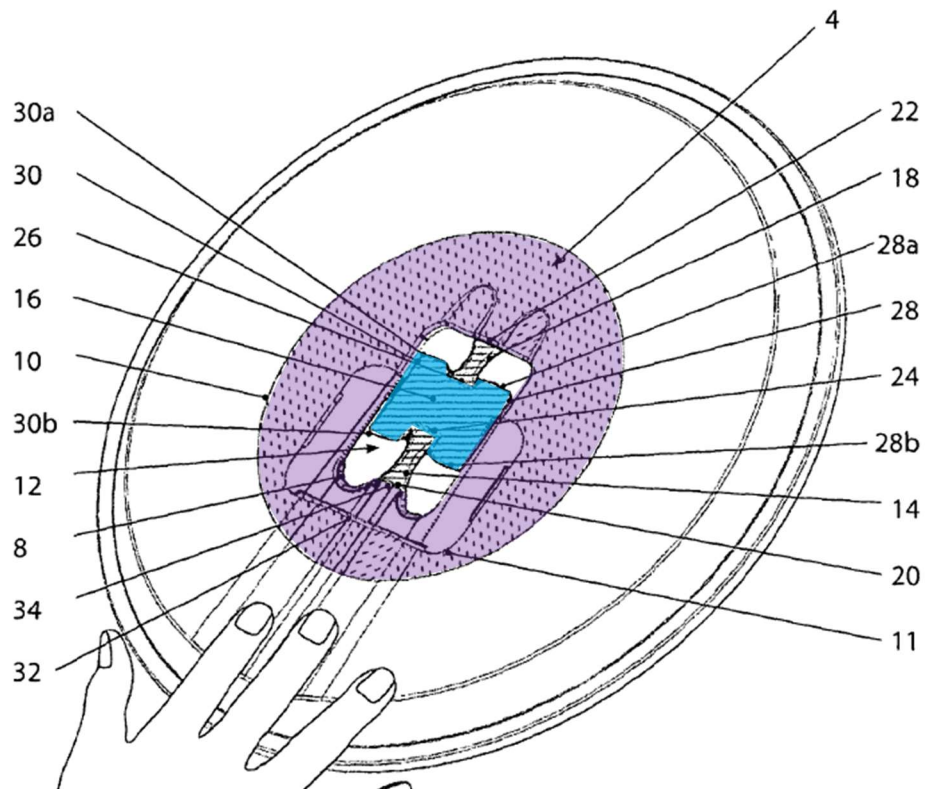
227. In my opinion, Grieve discloses this limitation.

229. In my opinion, Grieve discloses this limitation.

Claim Element 1e

[1e] wherein, the unitary finger support member is moveable between a closed position in which the unitary finger support member is substantially flush with the base plate and

230. Grieve teaches that the unitary finger support member (**finger support member 12**) is moveable from a closed position in which it is substantially flush with the base plate (**base member 10**):



EX1005, Fig. 2.

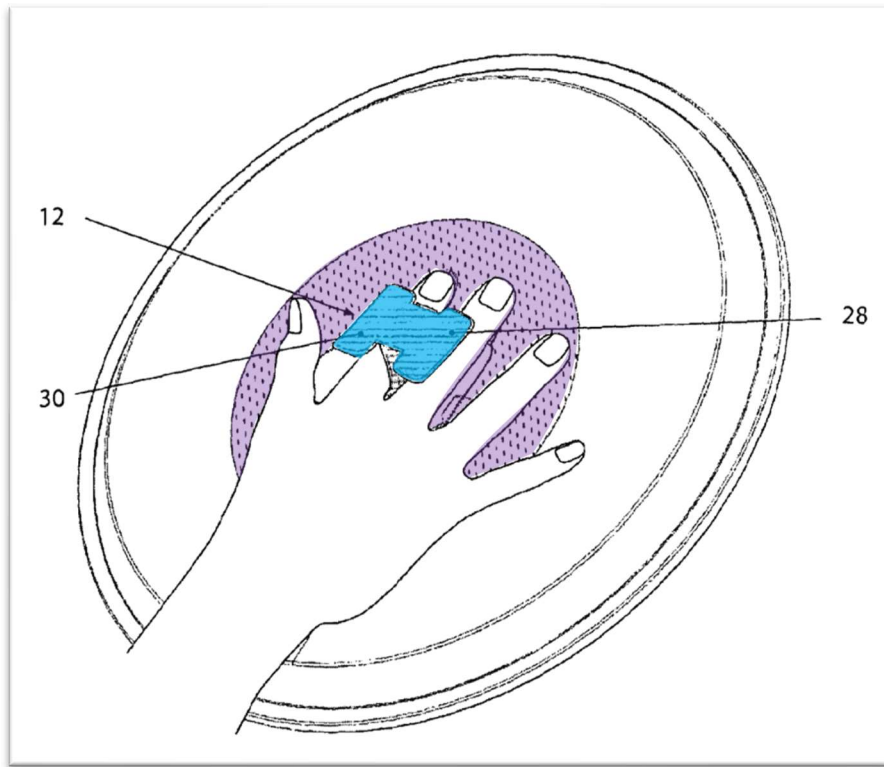
231. Grieve teaches that the finger support member is substantially flush with the base plate. EX1005, 18:7-8 (“in use, the finger support member can move between a closed position in which the finger support member is substantially flush with the underside of the tray”); *see also id.*, 5:15-16 (“For example, ***the device may be flush*** with the surface of the underside of the tray.”) and 11:5-9. A POSITA would understand Grieve to teach that the ‘stabilising device’ is substantially flush with the base plate when in a closed position (as it would be in a position in which the central portion and first and second ends of the finger support member are in contact with or in close proximity to the base plate). *See* Paragraphs 31-35, above.

232. In my opinion, Grieve discloses this limitation.

Claim Element 1f

an open position in which the unitary finger support member is spaced from the base plate such that a user can insert at least one unitary finger between the base plate and the unitary finger support member.

233. Grieve teaches the unitary finger support member (**finger support member 12**) is moveable to an open position that is spaced such that a user can insert at least one unitary finger between the baseplate (**base member 10**) and the unitary finger support member:

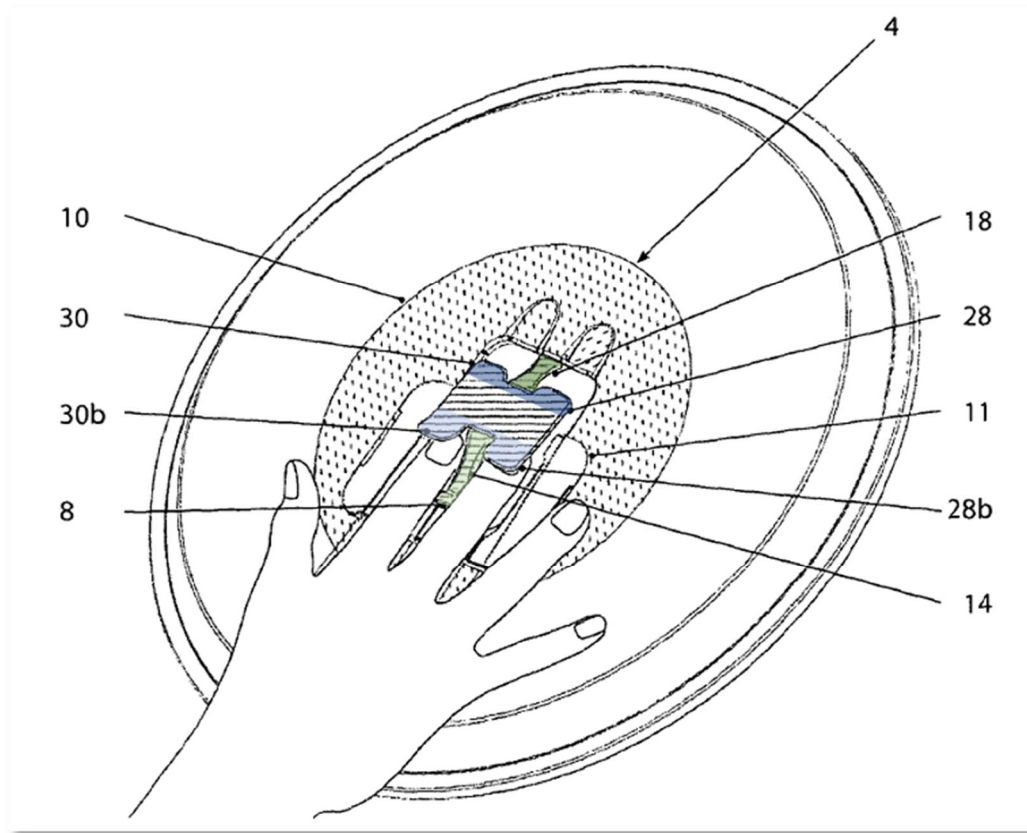


EX1005, Fig. 5; *see also id.*, 11:22-25 (“Once the tray bearer has inserted his or her index and middle fingers either side of the spacer element and caused the device to move to an open position, the backs of the index and middle fingers will contact the underside of the first and second ends of the finger support member.”).

234. In summary of my discussion above, it is my opinion that Grieve alone or in view of Karmatz renders Claim 1 obvious.

Claim 20

235. As explained above, there are three primary differences between Claim 1 and Claim 20: (1) the repeated limitation of Claim 1 that the claimed finger support member is “unitary;” (2) the limitations of Claim 20 that the claimed finger support member has a first and second side that are connected to the claimed first and second spacer elements respectively; and (3) the additional limitation of Claim 20 that the claimed base plate is rotatable specifically when the finger support member is in the closed position. *See supra* Ground 1, Claim 20.
236. Regarding the requirement of Claim 1 that the finger support member be unitary, the absence of this limitation from Claim 20 means additional analysis is unnecessary as, in this respect, Claim 20 is broader than Claim 1.
237. Regarding the limitations of Claim 20 that the finger support member have a **first** (dark blue, below) and **second side** (light blue), and that it is these sides that are attached to the **first** (dark green) and **second spacer elements** (light green), Grieve clearly discloses this arrangement as shown in the below annotations of Figure 3:



238. Regarding the additional limitation of Claim 20 requiring that the base plate be rotatable when the finger support member is in the closed position (in a position in which the central portion and first and second ends of the finger support member are in contact with or in close proximity to the base plate), it would have been obvious to modify Grieve to include rotatability. Similar to my discussion above in connection with Karmatz, there would be no design

incentive to include rotatability but prevent the base plate from rotating when closed. *And see* Paragraph 44.d. Further, a POSITA would recognize that permitting the rotatability of the base plate while closed would serve to facilitate user engagement when the stabilising device was not visible (e.g., on the far side of the portable computing device), thus permitting a user to align the stabilising device for use before actuating into the open position. Based on the resulting design incentives, it would be obvious for the modified Grieve to include a rotatable base plate, a modification well within the skill in the art, and which would have predictable results and expected success.

239. Alternatively, Karmatz discloses this limitation as discussed above. *See supra* Ground 1, Claim 20. It would have been obvious to include this limitation in the modified Grieve in light of Karmatz, because a POSITA would have no design incentive to add additional structures preventing such rotation. Further, a POSITA would recognize that permitting the rotatability of the base plate while closed would serve to facilitate user engagement when the stabilising device was not visible (e.g., on the far side of the portable computing device), thus permitting a user to align the stabilising device for use before actuating into the open position. In my view, and further based on the same motivations to modify Grieve described in the preceding paragraph,

it would have been obvious to modify Grieve in view of Karmatz to include this limitation.

240. In my opinion, Grieve alone or in view of Karmatz renders Claim 20 obvious.

Claim 3

3. A stabilising device according to claim 1, wherein the base plate is housed in a casing configured to be mounted on the portable computing device.

241. Grieve alone or in view of Karmatz renders Claim 3 obvious.

242. A POSITA would have been well aware at the time of the claimed priority date of the use of protective cases for the described portable computing devices by consumers.²⁴ Implementing a stabilising device solution that was compatible with such that functionality of such a stabilising device as part of a protective case solution would be driven by market forces and the resulting design incentives. A POSITA would understand the risk of such drops, and

²⁴ EX1012, U.S. Patent No. 8,922,985, at Cover, 1:61 and 2:33-34 (claiming priority date of Nov. 11, 2001, for a “A protective enclosure for an electronic device” including “for a tablet PC”).

would recognize the benefit of affording additional protection, and be motivated to house the base plate of the modified Grieve of Ground 2, Claim 1 within a casing configured to be mounted on the described portable computing device. Further, the modification of Grieve would have been a straightforward application of a known structure (the modified Grieve of Ground 2, Claim 1, above) to a related surface (the back of the protective case, rather than the described portable computing device itself), with predictable results and effectively assured success.

243. Alternatively, Grieve in view of Karmatz renders Claim 3 obvious. As explained above, Karmatz teaches the limitations of Claim 3. *See supra* Ground 1, Claim 3. A POSITA, tasked with improving the stability and/or ergonomics for a portable computing device, would have been well aware that it was common for users to protect their devices with protective cases.²⁵ *See* Paragraph 44.a. As identified by Karmatz, a POSITA knew at the time that

²⁵ *And, e.g.*, EX1012, U.S. Patent No. 8,922,985, at Cover, 1:61 and 2:33-34 (claiming priority date of Nov. 11, 2001, for a “A protective enclosure for an electronic device” including “for a tablet PC”).

consumers were also prone to drop their devices. *See* EX1004, [0006]. It would therefore have been obvious to a POSITA, based on same, and motivated by the same aim of stabilising the use of a portable computing device (whether clad in a protective case or not) to attach the stabilising grip of Grieve in view of Karmatz (*see* Ground 1, Claim 3, at Paragraph 128-130) to a protective case rather than the portable computing device itself. *And see* Paragraph 44.a. The modification of Grieve would have been a straightforward application of a known structure (Grieve in view of Karmatz of Ground 2, Claim 1, above) to a related surface (the back of the protective case, rather than the described portable computing device itself), with predictable results and effectively assured success. This motivation would have been both amplified and motivated in the alternative by Karmatz's disclosure that the base of such a stabilising device "may also be integrated into a removable protective case" (EX1004, [0029]). The POSITA would have been aware of such teachings and would have found housing the base plate of Grieve (base member 10) in a casing configured to be mounted on the portable computing device as taught by Karmatz to be obvious to try and, using standard techniques, achieve expected results.

244. In my opinion, Grieve alone or in view of Karmatz renders Claim 3 obvious.

Claim 4

4. The stabilising device according to claim 3, wherein the base plate is rotatable relative to the casing.

245. Grieve alone or in view of Karmatz renders Claim 4 obvious.

246. Consistent with the discussion above at Ground 1, Claim 4 (Paragraphs 133-135), this limitation is rendered obvious based on the limitation of Claim Limitation 1a. That is, as the protective case would not rotate relative to the handheld device, Claim Limitation 1a requirement that the base plate is “rotatable relative to the portable computing device [handheld device]” shows it is necessarily rotatable relative the protective case as well. *See* EX1004, [0029], [0035], [0052]. As a result, this claim is inherently disclosed by the modified Grieve of Claim 1, alone or in combination with Karmatz.

247. To the extent not inherently disclosed, Grieve and Karmatz both teach the limitations of Claim 4. *See supra* Ground 1, Claim 4. A POSITA, modifying the modified Grieve of Claims 1 and 3, above, alone or in combination with Karmatz, for use as a stabilising device of a portable computing device, would have found housing the base plate (base member 10) in a casing configured to be mounted on the portable computing device and making the base plate rotatable relative to the casing as taught by Karmatz to be obvious to try and, using standard techniques, achieve expected results. This would further be

driven by market trends for rotating screens of the described portable computing device, and would have been well within the skill in the art, with predictable results and expected success. See Paragraphs 44.d and 67.b.

248. In my opinion, Grieve alone or in view of Karmatz renders Claim 4 obvious.

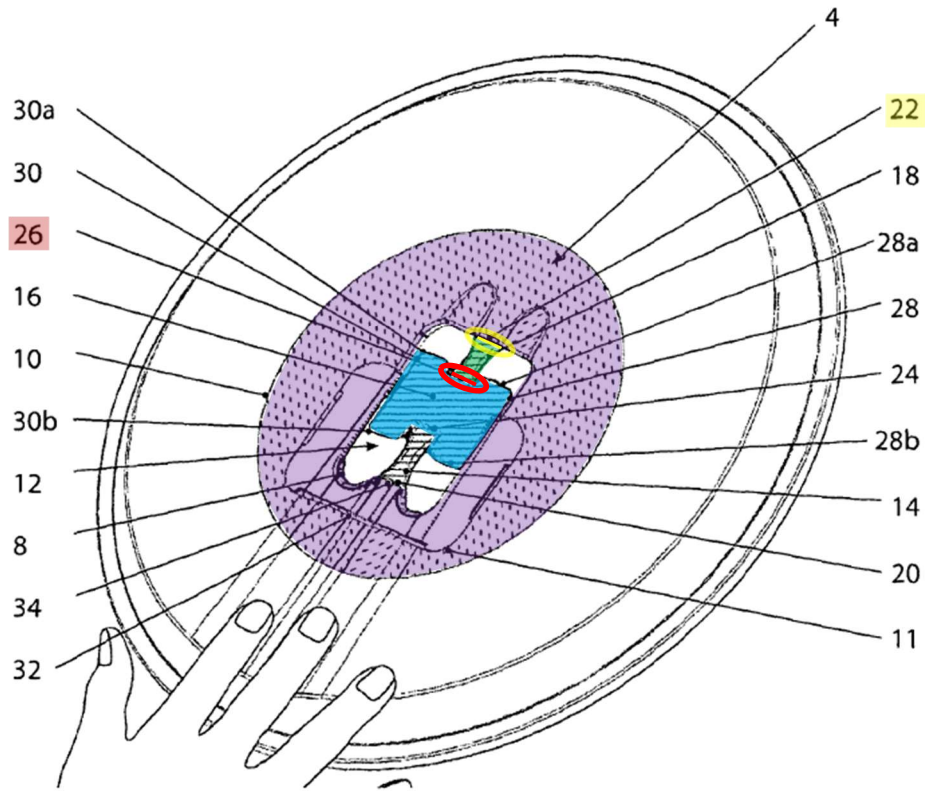
Claim 5 and 6

5. The stabilising device according to claim 1, wherein the first spacer element is connected to the base plate by means of a pivotal connection.

6. The stabilising device according to claim 1, wherein the first spacer element is connected to the unitary finger support member by means of a pivotal connection.

249. Grieve alone or in view of Karmatz renders Claim 5 obvious.

250. Grieve teaches that a **first spacer element** (second spacer element 18) “is pivotably connected to a **base member** 10 at **pivot point** (yellow) 22,” and “between the central portion 16 of finger support member 12 and second spacer element 18” at **pivot point** 26. EX1005, 13:22-23 and 13:36-14:2.



EX1005, Fig. 2 (annotated); *id.* 6:31-34; and 13:36-14:2 (“yet another pivot 26 . . . is provided between the central portion of the finger support member 12 and second spacer element 18.”), 7:34-36.

251. To the extent not rendered obvious by Grieve alone, Claims 5 and 6 are rendered obvious by the modified Grieve in view of Karmatz described and for the reasons stated above in Claim 1, with the limitations of Claims 5 and 6 merely introducing additional structure that would be part of any such combinations for the same reasons stated, and reflect the simple retention or

incorporation of known elements to a device with predictable results, entirely within the skill of a POSITA based on the disclosures of Grieve.

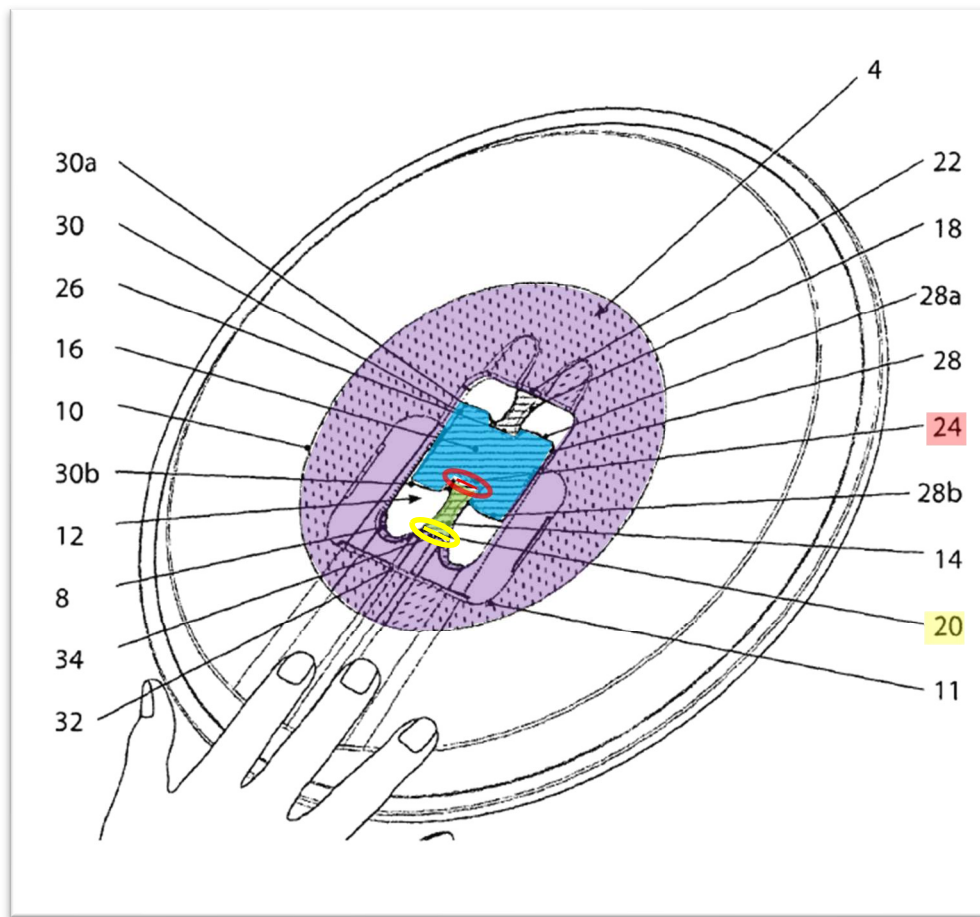
252. In my opinion, Grieve alone or in view of Karmatz renders Claims 5 and 6 obvious.

Claim 7 and 8

7. The stabilising device according to claim 1, wherein the second spacer element is connected to the unitary finger support member by means of a pivotal connection.

8. The stabilising device according to claim 1, wherein the second spacer element is connected to the base plate by means of a pivotal connection.

253. Grieve in view of Karmatz renders Claim 7 obvious. Grieve teaches that a **second spacer element** (first spacer element 14) is pivotably connected to a **finger support member** 12 at **pivot** 24 and to **base** 110 at **pivot** (yellow) 20. EX1005, 13:22-23.



EX1005, Fig. 2 (annotated), 13:34-35 (“A further pivot 24 . . . is provided between spacer element 14 and a central portion 16 of the finger support member.”); 6:25-26; *see also id.* 6:28-29 (“The at least one spacer element may be connected to the underside of the tray by means of a . . . pivotal connection.”).

254. To the extent not rendered obvious by Grieve alone, Claims 7 and 8 are rendered obvious by the modified Grieve in view of Karmatz described and

for the reasons stated above in Claim 1, with the limitations of Claims 7 and 8 merely introducing additional structure that would be part of any such combinations for the same reasons stated, and reflect the simple retention or incorporation of known elements to a device with predictable results, entirely within the skill of a POSITA based on the disclosures of Grieve.

255. In my opinion, Grieve alone or in view of Karmatz renders Claims 7 and 8 obvious.

Claim 12

12. The stabilising device according to claim 1, wherein at least one of the first spacer element and the second spacer element is/are connected to a central portion of the unitary finger support member.

256. Grieve alone or in view of Karmatz renders Claim 12 obvious.

257. Grieve teaches that the claimed “stabilising device” (stabilising device 4) has one the first or second spacer elements (first and second spacer elements 14, 18) are connected to a central portion of a unitary finger support member (finger support member 12). EX1005, 13:34-35 (“A further pivot 24, in the form of a fold, notch or groove in the material is provided between spacer element 14 and a ***central portion*** 16 of finger support member 12.”).

258. Based on the express and nearly verbatim disclosures of Grieve, it would be obvious for a POSITA to apply the same teachings in a combination of Grieve

and Karmatz to arrive at the claimed device. In addition to the modifications based on the reasons described above for Claim 1 (Paragraphs 211-240), further modification of Grieve to include attachment of the first spacer element and second spacer elements to a central portion of the unitary finger support member would reflect the mere application of known techniques to a known device with entirely predictable results, which application would be entirely within the skill and knowledge of a POSITA and result in the devices of Claim 12.

259. To the extent not obvious based on Grieve alone, Grieve in view of Karmatz discloses Claim 12. *See supra* Ground 1, Claim 12. A POSITA, considering the modified Grieve of Claim 1, above, in combination with Karmatz for use as a stabilising device of a portable computing device, would have found implementing the additional features of Claim 12 to be suggested and motivated by Grieve's express teachings. *See* Paragraph 258, above. Taking the Grieve device and including the limitations of Claims 12 (as disclosed by Grieve) and making the modifications motivated by Karmatz (*see* above) would be motivated for the reasons described at Ground 2, Claim 1, and in view of the similarity of the devices, further reflecting the simple retention or incorporation of known elements to a device with predictable results (e.g.,

improving stability of the grip by evenly applying forces to the center of the grip), entirely within the skill of a POSITA based on the disclosures of Grieve.

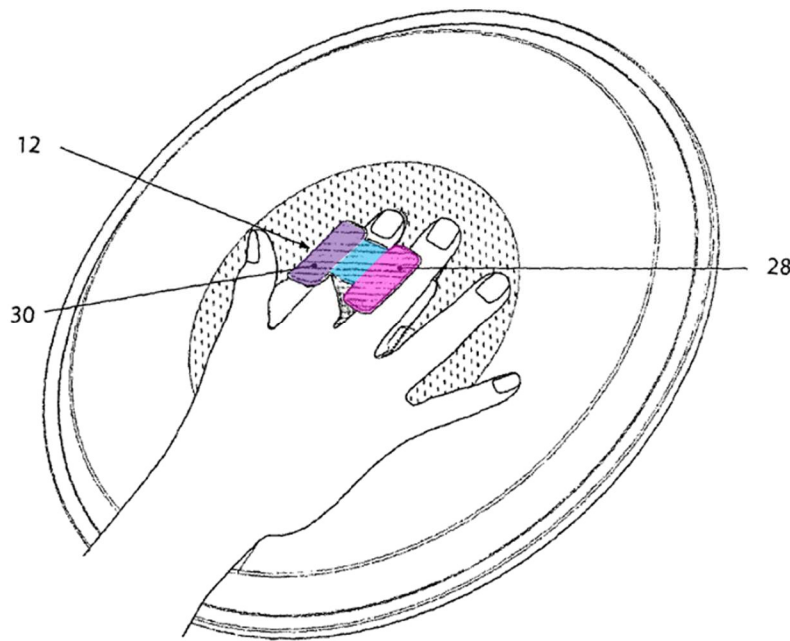
260. In my opinion, Grieve alone or in view of Karmatz renders Claim 12 obvious.

Claim 13

13. The stabilising device according to claim 1, wherein the unitary finger support member comprises first and second ends extending from opposite sides of a central portion thereof.

261. Grieve alone or in view of Karmatz renders Claim 13 obvious.

262. Grieve teaches a unitary finger support member (finger support member 12) that comprises first and second ends extending from opposite sides of central portion thereof. EX1005, 14:4-5 (“Finger support member shown generally at 12 comprises first and second ends 28, 30 extending from opposite sides of a central portion 16 of finger support member 12.”). This arrangement, with **first end** 28, **second end** 30, and the **central portion** of finger support unit 12, is depicted in Grieve’s Figure 5:



EX1005, Fig. 5 (annotated).

263. Based on the express and nearly verbatim disclosures of Grieve, it would be obvious for a POSITA to apply the same modifications to arrive at the claimed devices. In addition to the modifications based on the reasons described above for Claim 1 (Paragraphs 211-240), further modification of Grieve to have first and second ends of the unitary finger support member extending from opposite sides of its central portion would reflect the mere application of known techniques to a known device with entirely predictable results (e.g., increasing the user's ability to control the device by applying a greater surface area as a gripping surface), which application would be entirely within the skill and knowledge of a POSITA and result in the devices of Claim 13.

264. To the extent not obvious based on Grieve alone, Grieve in view of Karmatz discloses Claim 13. *See supra* Ground 1, Claim 13. A POSITA, considering the modified Grieve of Claim 1, above, in combination with Karmatz for use as a stabilising device of a portable computing device, would have found implementing the additional features of Claim 13 to be suggested and motivated by Grieve's express teachings. *See* Paragraph 263, above. Taking the Grieve device and including the limitations of Claim 13 (as disclosed) and making the modifications motivated by Karmatz (*see* above) would be motivated for the reasons described at Ground 2, Claim 1, and reflect the simple retention or incorporation of known elements to a device with predictable results, entirely within the skill of a POSITA based on the disclosures of Grieve. The modification would be obvious in further view of the simplicity of the structures.

265. In my opinion, Grieve alone or in view of Karmatz renders Claim 13 obvious.

Claim 14

14. The stabilising device according to claim 13, wherein the unitary finger support member comprises guide means at an edge of the unitary finger support member.

266. Grieve alone or in view of Karmatz renders Claim 14 obvious.

267. Grieve explicitly discloses that its unitary finger support member (finger support member 12) includes guide means. EX1005, 19:21-22 (“The tray according to any one of the preceding claims, wherein the finger support member comprises ***guide means at an edge of the [unitary] finger support member.***” (emphasis added); *see also id.*, 14:5-17. The remaining elements are disclosed and rendered obvious by Grieve in view of Karmatz, as demonstrated above regarding Claims 1 and 13.
268. Based on the express and nearly verbatim disclosures of Grieve, it would be obvious for a POSITA to apply the same modifications to arrive at the claimed devices. In addition to the modifications based on the reasons described above for Claim 1 (Paragraphs 211-240), further modification of Grieve’s unitary finger support member to comprise guide means at an edge of the unitary finger support member would reflect the mere application of known techniques to a known device with entirely predictable results, which application would be entirely within the skill and knowledge of a POSITA and result in the devices of Claim 14.
269. To the extent not obvious based on Grieve alone, Grieve in view of Karmatz discloses Claim 14. *See supra* Ground 1, Claim 14. A POSITA, considering the modified Grieve of Claim 1, above, in combination with Karmatz for use

as a stabilising device of a portable computing device, would have found implementing the additional features of Claim 14 to be suggested and motivated by Grieve's express teachings and independently driven by the knowledge in the art. *See* Paragraph 268, above. Taking the Grieve device and including the limitations of Claim 14 (as disclosed) and making the modifications motivated by Karmatz (*see* above) would be motivated for the reasons described at Ground 2, Claim 1, and reflect the simple incorporation of known elements to a device with predictable results, entirely within the skill of a POSITA based on the disclosures of Grieve.

270. In my opinion, Grieve alone or in view of Karmatz renders Claim 14 obvious.

Claim 15

15. The stabilising device according to claim 14, wherein the guide means comprise at least one arcuate element arcing in a direction away from the base plate.

271. Grieve alone or in view of Karmatz renders Claim 15 obvious.

272. Grieve discloses that its unitary finger support member (finger support member 12) includes guide means comprising arcuate elements arcing in a direction away from Grieve's base plate (base member 10). EX1005, 14:5-9 ("Guide means 28a, 28b, 30a and 30b are in the *form of arcuate elements* extending from first and second ends 28, 30, *arcing in a direction away* from

the underside of the tray.” (emphasis added)); *see also id.*, 8:21-22, 14:16-17.

The remaining elements are disclosed and rendered obvious by Grieve in view of Karmatz, as demonstrated above regarding Claims 1, 13, and 14.

273. Based on the express and nearly verbatim disclosures of Grieve, it would be obvious for a POSITA to apply the same modifications to arrive at the claimed devices. In addition to the modifications based on the reasons described above for Claim 1 (Paragraphs 211-240), further modification of Grieve’s guide means to include at least one arcuate element arcing in a direction away from the base plate would reflect the mere application of known techniques to a known device with entirely predictable results, which application would be entirely within the skill and knowledge of a POSITA and result in the devices of Claim 14.

274. To the extent not obvious based on Grieve alone, Grieve in view of Karmatz discloses Claim 14. *See supra* Ground 1, Claim 14. A POSITA, considering the modified Grieve of Ground 2, Claims 1 and 13, above, in combination with Karmatz for use as a stabilising device of a portable computing device, would have found implementing the additional features of Claim 14 to be suggested and motivated by Grieve’s express teachings. *See* Paragraph 273, above. Taking the Grieve device and including the limitations of Claim 14

(as disclosed) and making the modifications motivated by Karmatz (*see above*) would be motivated for the reasons described at Ground 2, Claims 1 and 13, and reflect the simple retention or incorporation of known elements to a device with predictable results, entirely within the skill of a POSITA based on the disclosures of Grieve. Separately, this claim would be obvious in view of the express direction in the art to round corners in order to improve user comfort while interacting or engaging with edges. *See* Paragraph 44.c.

275. In my opinion, Grieve alone or in view of Karmatz renders Claim 14 obvious.

Claim 16

16. The stabilising device according to claim 1, wherein at least the base plate, the unitary finger support member and the first spacer element are integrally formed.

276. Grieve alone or in view of Karmatz renders Claim 16 obvious.

277. Grieve discloses a stabilising device 4 wherein “[t]he components of the device may be integrally formed,” including the base plate (base member 10), unitary finger support member (finger support member 12) and first spacer element (second spacer member 18). EX1005, 3:20; *see also id.* 6:6-7 (“The base member may be integrally formed with the rest of the stabilising device.”), 6:31-32 (“Advantageously, the at least one spacer element and base member are integrally formed from the same material.”).

278. Based on the express and nearly verbatim disclosures of Grieve, it would be obvious for a POSITA to apply the same modifications to arrive at the claimed devices. In addition to the modifications based on the reasons described above for Claim 1 (Paragraphs 211-240), further modification of Grieve to have the base plate, the unitary finger support member and the first spacer element integrally formed would reflect the mere application of known techniques to a known device with entirely predictable results, which application would be entirely within the skill and knowledge of a POSITA and result in the devices of Claim 16.
279. To the extent not obvious based on Grieve alone, Grieve in view of Karmatz discloses Claim 16. *See supra* Ground 1, Claim 16. A POSITA, considering the modified Grieve of Ground 2, Claim 1, above, in combination with Karmatz for use as a stabilising device of a portable computing device, would have found implementing the additional features of Claim 16 to be suggested and motivated by Grieve's express teachings. *See* Paragraph 278, above. Taking the Grieve device and including the limitations of Claim 16 (as disclosed) and making the modifications motivated by Karmatz (*see* above) would be motivated for the reasons described at Ground 2, Claim 1, and reflect the simple retention or incorporation of known elements to a device with

predictable results, entirely within the skill of a POSITA based on the disclosures of Grieve.

280. In my opinion, Grieve alone or in view of Karmatz renders Claim 16 obvious.

Claim 17

17. The stabilising device according to claim 1, wherein the base plate comprises one or more channels for guiding a user's fingers toward the unitary finger support member and the first spacer element.

281. Grieve alone or in view of Karmatz renders Claim 17 obvious.

282. Grieve discloses that its base plate (base member 10) comprises “one or more channels for guiding the user’s fingers towards the device [(i.e., the unitary finger support member and first spacer element.” EX1005, 3:24-25; *see also id.*, 17:2-10 (“That is to say, the user’s fingers approach stabilising device 4’ using channels provided in the underside of the tray as a guide to correct finger positioning.”), 19:32-34.

283. Based on the express and nearly verbatim disclosures of Grieve, it would be obvious for a POSITA to apply the same modifications to arrive at the claimed devices. In addition to the modifications based on the reasons described above for Claim 1 (Paragraphs 211-240), further modification of Grieve to include one or more channels for guiding a user’s fingers toward the unitary finger support member and the first spacer element would reflect the mere

application of known techniques to a known device with entirely predictable results, which application would be entirely within the skill and knowledge of a POSITA and result in the devices of Claim 17.

284. To the extent not obvious based on Grieve alone, Grieve in view of Karmatz discloses Claim 17. *See supra* Ground 1, Claim 17. A POSITA, considering the modified Grieve of Ground 2, Claim 1, above, in combination with Karmatz for use as a stabilising device of a portable computing device, would have found implementing the additional features of Claim 16 to be suggested and motivated by Grieve's express teachings. *See* Paragraph 283, above. Taking the Grieve device and including the limitations of Claim 17 (as disclosed) and making the modifications motivated by Karmatz (*see* above) would be motivated for the reasons described at Ground 2, Claim 1, and reflect the simple incorporation of known elements to a device with predictable results, entirely within the skill of a POSITA based on the disclosures of Grieve.

285. In my opinion, Grieve alone or in view of Karmatz renders Claim 17 obvious.

X. SECONDARY CONSIDERATIONS

286. I am not aware of any secondary considerations that would make Claims 1-20 of the '691 Patent nonobvious over the prior art considered herein. Regardless,

any possible secondary considerations would not overcome the above-cited prior art, which clearly demonstrates that the subject matter of Claims 1-20 of the '691 Patent would have been obvious to a POSITA as of April 26, 2013.

I hereby declare that statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true. Should further information become available to me as this matter proceeds, I may revise my opinions accordingly as necessary. I declare under penalty of perjury that the foregoing Declaration is true and correct.

Executed on February 20, 2025.

By: Paul Hatch



Appendix A

Curriculum Vitae

Resume Of Paul Hatch

Professional Experience

Aug 2022- current

Adjunct Faculty, UIC Learning Sciences

Aug 2019 – current

CEO, Hatch-IP, LLC

Oct 1998 – July 2020

CEO, TEAMS Design USA, Inc

Aug 2016 – current

CEO, Hatch-IP, LLC

May 2014 - 2018

Co-Founder, Design House LLC (Non-profit organization)

April 1993 - Oct 1998

Senior Designer, TEAMS Design GmbH, Germany.

Sept 1991- Sept 1992

Junior Industrial Designer, IDEA Design, Germany

July 1991 – Sept 1991

Junior Industrial Designer, Schroerdesign, Germany

June 1990 – Sept 1990

Junior Industrial Designer, DA Display Ltd, UK

Education

Ph.D. Candidate - Learning Sciences, University of Illinois, Chicago (current study).

BA (Hons) Degree 'Design For Industry' from University of Northumbria at Newcastle, Newcastle-upon-Tyne, UK.

Diploma in General Art & Design, Sutton Coldfield College of Further Education, Sutton Coldfield, West Midlands, UK.

Books Published

"REALIZE - Design Means Business" (Portuguese translation), 2009

"REALIZE - Design Means Business" (Chinese translation), 2008

"REALIZE – Design Means Business" (US original. Co-editor and contributor), 2006

"IMPACT, the Synergy of Technology, Business and Design" (Co-editor and contributor), 2005

Published Articles and Peer-reviewed Scientific Papers:

Hatch, P., & Michaelis, J.E. (2024). A Framework for Collaborative Learning in Immersive Virtual Reality. ISLS Annual Meeting, Buffalo, USA.

Hatch, P., & Michaelis, J.E. (2023). "Wait, wait, go back": Investigating social supports for homework during co-design sessions with teachers. ISLS Annual Meeting. ISLS, Montreal, Canada.

Hatch, P., & Michaelis, J.E., Rahman Md A. (2023). PATHWiSE: An Authoring Tool to Support Teachers to Create Robot-Supported Social Learning Experiences During Homework. Proceedings ACM Human-Computer Interaction 7, CSCW1

Hatch, P., & Michaelis, J.E. (2022). Making Home...Work: Codesigning Teacher Tools to Support At-Home Learning. ISLS Annual Meeting. ISLS, Hiroshima, Japan.

Hatch, P., & Michaelis, J.E. (2022). Teacher Perspectives on Personalized Guidance for Science Homework. Annual Meeting of the AERA. AERA, San Diego, CA.

Innovation Magazine: "Immersive Design: What the Metaverse Means for Industrial Design", April 2022

Hatch, P. & Michaelis, J.E. (2021). Revitalizing Homework Through Technology. LSGSC 2021 Proceedings. LSGSC, Urbana-Champaign, IL.

Hatch, P. & Michaelis, J.E. (2021) "Co-designing Teacher Tools to Support At-home Learning" ISLS 2021 Conference Proceedings. ISLS

Innovation Magazine: "Design Is Dead, Long Live Design", June 2018

LinkedIn Pulse: "Disruptive Innovation ...For Stability", May 2017

Innovation Magazine: "The State of Design – Maintaining a Proper Vision", Summer 2016

LinkedIn Pulse: "Getting Emotional – Design, UX and Magic" – Sept 2016

LinkedIn Pulse: "The Local Revolution –How Design is Reinventing Manufacture", Mar 2016

LinkedIn Pulse: "Design Thinking Is Only Half The Story", Jan 2016

LinkedIn Pulse: "The Macintosh Moment –Why IoT Needs ID, UX and Design Thinking" Feb 2016

LinkedIn Pulse: "User Experience – Fun For All The Family", Dec 2015

Innovation magazine: "To Design Is Human", Spring 2013

Innovation magazine: "Finding The Sweet Spot", Spring 2010

Insight magazine: "Profit, By Design", April 2005

Innovation magazine "Designer In The Middle", Spring 2004

Innovation magazine: "How To Avert The Asian Shift", Fall 2004

International Housewares Association Magazine: "Brand Differentiation Through Design Details", Feb 2003

Television, Book and Magazine Interviews

(Book) "Extended Reality: The Next Frontier of Design". Ralf O Schneider, April 2021

PRISM Podcast: "The Changing World of Design with Paul Hatch", April, 2021

Learning Sciences Research Institute – “Seeing A Way To Help”, Sept 2020

DesignDrives Podcast – “Paul Hatch – Driving Innovation in Connected AI Products”, March 2020

Apple podcast “Context” – “Interview with Paul Hatch”, July 2019

Appliance Design Magazine: “The Internet of Things and The Pampered User”, March 2019

Appliance Design Magazine: “Design Quality”, Nov 2018

Appliance Design Magazine: “Connected Product Design”, July 2018

Appliance Design Magazine: “Paul Hatch Discusses the Intersection of Quality Data and a Better User Experience, April 2018

Bosch Connected World: “Industrial Design in the Age of IOT”, Feb 2018

Child Art /Learning From Design: “Paul Hatch”, Fall 2016

Pittsburgh Technology Council (site): “It’s All In The Jam!”, Feb 2016

Chicago Tribune: “How A Group of Chicago Product Designers Aims to Boost Manufacturing”, June 30 2014

IDSA site: “Paul Hatch on The Changing Mechanics of the Design Business”, June 2014

(Book) “Breaking In” by Amina Horozic, May 2014

(Book) “Drawing For Product Designers” by Kevin Henry, Sept 2012

Taiwan “Designer” Magazine: “Teams Design To Success in Past 50 Years”, Dec 2011

IDSA site: “What Paul Hatch Thinks About Contrast”, Mar 2011

New York Daily News: “From 0 to 60 in the Kitchen”, June 2009

(Television) “190 North”, June 2006

Appliance Design Magazine: “IATC Review: Taking A World View”, May 2006

Appliance Design Magazine: “Industrial Design and Human Factors”, March 2004

(Television) “World Business Review with Alexander Haig”, May 2003

Conference Presentations, Proceedings and Invited Lectures:

Invited Panelist: From Like to Love –Future of Product 2024, Chicago, May 2024

Invited Speaker: Paul Hatch on Virtual Reality and Design – UIC Chicago, Jan 2023

Invited Panelist: Good Product Design –Future of Design 2022, Chicago, May 2022

Invited Speaker: Design & Cognitive Psychology – SCAD, Georgia, Sept 2020

Invited Speaker: Design & Cognitive Psychology – UIC Chicago, Mar 2020

Keynote Speaker: UX and IOT – Newell Congress Chicago, July 2018

Invited Speaker: Connecting the Smart Home to the Homeowner – International Housewares Show, Jan 2018

Invited Panelist: Intellectual Property and Design Rights – 13th Annual Foley IP Conference, Sept 2017

Keynote Speaker: Naked Design and Visual Perception – North Carolina State University, Nov 2017

Keynote Speaker: Communicate or Die – UIUC, Dec 2016

Keynote Speaker: The World Class Designer – Newell Summit, Kalamazoo, Oct 2016

Invited Speaker: IOT and The Macintosh Moment –Connected World Conference, Sept 2016

Keynote Speaker: Talking Loud & Clear- CSULB San Francisco, Aug 2016

Invited Speaker: UX and IOT – Windy City Things, June 2016

Keynote Speaker: Design For Local – IDSA International Conference, Atlanta, Aug 2016

Keynote Speaker: Design Like an ID-IOT – Manifest, Chicago, May 2016

Keynote Speaker: UX and the ID-IOT – IDSA Western District Conference, Denver, March 2016

Invited Speaker: Brand Personalities – DMI National Conference, Boston, Sept 2015

Keynote Speaker: Design For Local – PD+I Conference, London, May 2015

Keynote Speaker: Paul Hatch and the Evolution Of Consumer Products – Garmin Center, March 2015

Invited Speaker: The Changing Mechanics of the Design Business, IDSA International Conference, Austin, June 2014

Invited Speaker: Design as a Center Of Excellence – Bosch Global Summit May 2014

Keynote Speaker: Visual Perception and the Designer – Purdue University Oct 2013

Invited Participant: The Meaning Of Life – Ignite Talk, ORD Camp, Chicago May 2013

Keynote Speaker: Communicate Or Die – IDSA Midwest District Conference 2012

Keynote Speaker: Designing For International Markets – Stryker Summit, Kalamazoo, June 2012

Invited Speaker: Run Like A Designer – IDSA Southern District Conference, May 2011

Invited Speaker: Reinventing The Wheel - IDSA Midwest District Conference, April 2011

Keynote Speaker: Future Tech trends – IATC Engineering Conference, May 2010

Invited Panelist: The Top i-Gadgets – Consumer Electronics Show, Jan 2010

Invited Participant: Designer Mixtape– IDSA International Conference Aug 2009

Keynote Speaker: Creating A Creative Culture -ID-DNA- IDSA Midwest Conference, March 2009

Invited Speaker: Protecting Brand Equity – PDMA, 2008

Invited Panelist: Developing A Brand Identity To Grow Your Margins -Consumer Electronics Show, Jan 2006

Invited Speaker: Brand Differentiation Through Design Details – International Housewares Show, Jan 2003

Invited Speaker: Design in the USA – USA Forum, Frankfurt Germany, Feb 2000

Professional Honors and Other Achievements:

2022 Graduate Research Fellow, National Science Foundation.

2018 Presented the IDSA Fellowship Award.

2016 was elected onto the board of the IDSA as Director-at-Large.

2015 Called to meeting at The White House by Barack Obama and Secretary of Commerce Penny Pritzger for Forum on supporting US manufacture.

2014 Founded Design House Inc, a nonprofit organization whose mission is to help revitalize local manufacture through design.

2013 Elected Chair of IDSA International Conference 'Breaking The Rules'

2009 Third design professional ever to be awarded the IDSA Midwest Honors for Outstanding Achievement.

2005-07 Elected to The Board of Directors, Industrial Designer Society of America.

2006 Elected Chair for IDSA Midwest Conference "Home, Urban Seduction & Design", Chicago, IL

2005 Elected Chair for IDSA Midwest Conference "Impact -Design Means Business" at University of Urbana-Champaign, IL.

2005 Founded and ran 'Fight Club', which NY Times called "A Designer Slugfest". It later became a pilot Reality TV show.

2004 Elected Chair for IDSA Midwest Conference "Shift Happens", Chicago, IL

2000 Received the "Design of The Decade Award" from Business Week and the IDSA for TEAMS Design's achievements.

Awards:

2020

IDEA Jury Chair Award: Essilor QuickCheck

IDEA Medical Device Gold Award: Essilor QuickCheck

2017

Good Design Award: Robert Bosch Custom Case System

2015

iF Product Design Award: Bosch Dicens Wireless Conference Device

iF Product Design Award: Bosch CCS 1000D Conference Device

iF Product Design Award: Electro-Voice ETX-15P

Good Design Award: Gehl's 2.0 Dispenser

2014

iF Product Design Award: Electro-Voice ZLX-12P

Good Design Award: Bosch Dicens Wireless Conference Device

2013

Good Design Award: Electro-Voice ZLX Speakers

2011

Appliance Design EID Silver Award : Business Machine – HoMedics Inc. Black & Decker
Hanging Crosscut 6-Sheet Paper Shredder

Appliance Design EID Silver Award: Small Appliances – Robert Bosch Corp., 12" Dual-
Bevel Glide Miter Saw

Appliance Design EID Silver Award: Small Appliances – HoMedics Inc., Black & Decker
iShred

Appliance Design EID Bronze Award: Small Appliances – Jarden Consumer Solutions,
Mr. Coffee Optimal Brew Thermal Coffeemaker

Good Design Award: Bosch Portable Jobsite Table Saw

2010

iF Product Design Award: Mr. Coffee Optimal Brew Thermal Coffeemaker

ID Magazine Annual Design Review: Robert Bosch Full Force Pneumatic Nail Guns

Appliance Design EID Award: Federal Signal Automated Parking Products

Appliance Design EID Award: Robert Bosch Full Force Pneumatic Nail Guns

Appliance Design EID Silver Award: Federal Signal Automated Parking Products
Universal One & Universal PS

Appliance Design EID Silver Award: Robert Bosch Full Force Pneumatic Nail Guns

Appliance Design EID Bronze Award: Sunbeam Products Flat Panel Heater

Appliance Design EID Award: Sunbeam Products Flat Panel Heater

2009

Appliance Design EID Silver Award: Robert Bosch RS35 Reciprocating Saw

Appliance Design EID Silver Award: Argus Camera Company Kid's Cameras Bean and
Sprout

IHA Award: Wusthof-Trident Precision Edge Electric Knife Sharpener

IHA Award: Smith's Edge Diamond Edge Electric Knife and Scissors Sharpener

Good Design Award: Robert Bosch Pneumatic Nailers

Good Design Award: RS35 Demolition Reciprocating Saw

Good Design Award: Precise Path Robotics RG3 Robotic Greens Mower

IDEA Award: Argus Bean Children's Digital Camera

2008

ADEX Award: Mansfield Reo Bathroom Suite

ADEX Award: Mansfield Essence Bathroom Suite

Good Design Award: Argus Camera Kid's Cameras Bean and Sprout

Spark Award Bronze: Precise Path RG3 Mower

2005

Good Design Award: LR Nelson Costco 3 Piece Nozzle Set

2001

iF Product Design Award: Karcher HDS 698 CSX Heated Pressure Washer

2000

Design of the Decade (IDSA /BusinessWeek): Karcher Full Line of Power Washers

I.D. Magazine Design Awards: Siemens Easy Control Climate Control Unit

iF Product Design Award: Siemens Easy Control Climate Control Unit

PATENTS (Design patents, utility patents and patents pending).

2024/0041,235	2024	Food Product Dispenser and Valve
11,389,057	2022	Vision Measurement Device and Method of Measuring Vision Using The Same
11,239,674	2022	Power pack vending apparatus, system and method of use for charging packs with biased locking arrangement
2020/0069089	2020	Food Product Dispenser and Valve
WO 063584	2019	Vision Measurement Device and Method of Measuring Vision Using the Same
EP3687373	2018	Vision Measurement Device and Method of Measuring Vision Using the Same.
10,470,597	2019	Food Product Dispenser and Valve
10,194,763	2019	Food Product Dispenser and Valve
10,084,329	2018	Power pack vending apparatus, system, and method of use for charging power packs with biased locking arrangement
D800803	2017	Table Saw
D794407	2017	Power tool
9,717,354	2017	Food product dispenser and valve
2017/0251846	2017	Food Product Dispenser and Valve
D761337	2016	Saw
DE10 209490	2016	Werkzeugaufbewahrungsvorrichtung (Tool Storage Device)
9,132,559	2015	Cutlery having improved gripping ergonomics
2014/0214,518	2014	System and method for price matching and comparison
D689252	2013	Portion of floor cleaning machine
D686791	2013	Vacuum cleaner handle

D674371	2013	Portable audio device
2012/0159793	2012	Slidable chopping attachment for kitchen knives
D646935	2011	Cutlery block
D645715	2011	Pull saw
D639616	2011	Cutlery handle
D639615	2011	Cutlery handle
D639614	2011	Cutlery handle
JP005278	2011	IV Pole
7,703,750	2010	Storage apparatus
WO 019238	2010	Rotary food cutter with removable blade assembly
2010/0037,787	2010	Rotary food cutter with removable blade assembly
7,708,167	2010	Dispensing Apparatus
D607024	2009	Hinge boring bit
D594292	2009	Pizza cutter
D593817	2009	Box grater
D591118	2009	Bottle opener
D584111	2009	Colander
D583207	2008	Can opener
2008/0093,489	2008	Spice Grinder Assembly with Grind Adjusting Wheel
7,325,785	2008	Storage apparatus
D565164	2008	Volatile Dispenser
D559640	2008	Palm Grip Sander
D555435	2007	Spice grinder
D550027	2007	Pan handle
D555902	2007	Case for tool accessories
D553857	2007	Case for tool accessories
2007/0023455	2007	Dispensing Apparatus
D553233	2007	Volatile Dispenser
2007/0197152	2007	Powered paint removal tool

7,270,496	2007	Ring Mechanism for a ring binder
D533041	2006	Drilling and driving tool
D523634	2006	Insert bit dispenser
D518893	2006	IV Pole
D525096	2006	Tuck pointer
6,983,930	2006	Clamping device with flexible arm
WO 027702	2005	Dispensing apparatus
CA 2469977	2005	Ring mechanism for a ring binder
2005/0265775	2005	Ring mechanism for a ring binder
6,969,031	2005	Adjustable moveable IV stand
2004/0151,531	2004	Sound deadening mechanism for a ring binder
EP 1,706,010	2004	IV Pole
6,754,935	2004	Power tool handle
EP 1,509,366	2003	Power Tool Handle
2003/0221292	2003	Power tool handle
D470871	2003	Mobile oil dispenser
CA 2488612	2003	Power tool handle
D475595	2003	Circular saw with top handle
D475265	2003	Circular saw with rear handle
D441342	2001	Power station with corded backup

Appendix B

Selected Patents Issued to Paul Hatch

Patents including teachings for handle design

D800803	2017	Table Saw
D794407	2017	Power tool
D761337	2016	Saw
9,132,559	2015	Cutlery having improved gripping ergonomics
D686791	2013	Vacuum cleaner handle
D674371	2013	Portable audio device
D639616	2011	Cutlery handle
D639615	2011	Cutlery handle
D639614	2011	Cutlery handle
JP005278	2011	IV Pole
WO 019238	2010	Rotary food cutter with removable blade assembly
2010/0037,787	2010	Rotary food cutter with removable blade assembly
D594292	2009	Pizza cutter
D593817	2009	Box grater
D591118	2009	Bottle opener
D583207	2008	Can opener
D550027	2007	Pan handle
D530,172	2006	Powered paint removal tool
D533041	2006	Drilling and driving tool
D518893	2006	IV Pole
D525096	2006	Tuck pointer
EP 1,706,010	2004	IV Pole
6,754,935	2004	Power tool handle
EP 1,509,366	2003	Power Tool Handle
2003/0221292	2003	Power tool handle
D470871	2003	Mobile oil dispenser
CA 2488612	2003	Power tool handle
D475595	2003	Circular saw with top handle
D475265	2003	Circular saw with rear handle
D441342	2001	Power station with corded backup

Appendix C

Prior Testimony

The following is a list of all cases I have served as an expert witness and testified either at trial or by deposition in the last 4 years:

Year	Case	Case Number	Regarding
2024	<u>Dyson</u> v Shark Ninja	1:23-cv-11277-ADB	Utility patents
2024	<u>Gamon</u> v Campbell	15-cv-8940	Utility Patents
2024	<u>Flipsi</u> v TOMY International	23-cv-00745	Design Patents
2023	Sterilite v <u>Olivet</u>	1:22-cv-10327	Trade Dress
2023	Facet Technologies v <u>Lifescan</u>	IPR2023-00712, 2:22-cv-01717-MCS-MARx	Utility Patents
2023	<u>Molo</u> v Chanel	CAN T-379-21	Utility Patents
2024	<u>Design Ideas Ltd</u> v Target Corporation	3:20-cv-03231-SEM-EIL	Utility and Design Patents
2022	<u>Cambria Company LLC</u> v. Lakeside Surfaces Inc	20-cv-00508-PLM-PJG	Design Patents
2022	<u>Hangzhou Chic Intelligent Technology Co. and Unicorn Global Inc.</u> v. Selected Partnerships and Unincorporated Associations	20-cv-05905	Design Patents
2021	<u>Skull Shaver, LLC</u> v. Ideavillage Products Corporation	2:18-cv-03836	Design Patents
2021	<u>Shure Inc., and Shure Acquisition Holdings, Inc.,</u> v. Clearone, Inc	19-1343-RGA-CJB	Design Patents