

Declaration of Dr. Gregory D. Buckner in Support of
Petition for Post Grant Review of
U.S. Patent No. 12,133,078

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BE SMARTER, LLC AND JAMES GUERRA

Petitioners

v.

YONDR, INC.
Patent Owner

PGR2025-00070
Patent No. 12,133,078 B2
Filing Date: March 14, 2024
Issue Date: October 29, 2024
Title: System and Apparatus for Selectively Limiting
User Control of an Electronic Device

DECLARATION OF DR. GREGORY D. BUCKNER

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I. INTRODUCTION

1. I, Dr. Gregory D. Buckner, am a Professor in the Department of Mechanical and Aerospace Engineering at North Carolina State University.

2. I have been retained by the defendant Be Smarter, LLC, to study and provide my expert opinion regarding the validity of U.S. Patent 12,133,078 (“the ’078 patent”).

3. I understand this declaration will be submitted in connection with a Petition for Post-Grant Review before the United States Patent and Trademark Office regarding the ’078 patent brought by Defendants Be Smarter LLC and James Guerra (collectively, “Be Smarter”). I am competent to testify under oath regarding the matters addressed in this declaration and will do so if called as a witness.

II. SUMMARY OF OPINIONS

4. Based on my experience, my analysis of prior art references, the intrinsic record (the ’078 patent, its claims, and its prosecution history), and the meaning of the patent’s claims per the claim construction proposed by BeSmarter, it is my opinion that claims 1–5, 9–11, 15–16 and 19 of the ’078 patent (the “Challenged Claims”) are anticipated or obvious in view of the prior art references discussed below. In forming my opinions, I understand from counsel that the effective filing date of the ’078 patent is April 21, 2015. The opinions herein referencing the general knowledge of a person of ordinary skill in the art (“POSA”)

refer to the general knowledge of a POSA at the time the invention claimed in the '078 patent was made, which I have been informed is the timeframe prior to April 21, 2015. It is further my opinion that the Challenged Claims are indefinite because the claims fail to inform a POSA with reasonable certainty about the scope of the invention in light of the claims use of the phrase "associated with." It is also my opinion that the Challenged Claims are directed at an abstract idea and there is no inventive concept that transforms them from an abstract idea into a technical application that does more than apply prior art technology to the abstract idea.

III. PROFESSIONAL BACKGROUND

5. My curriculum vitae is attached as Section XV.

6. I am being compensated at a rate of \$350 per hour for my analysis and testimony in this matter. I am also being reimbursed for reasonable and customary expenses associated with my work and testimony in this investigation. My compensation is not contingent on the outcome of this matter or the specifics of my testimony.

7. I am a Professor of Mechanical and Aerospace Engineering and an Affiliate Faculty of Electrical and Computer Engineering at North Carolina State University (NCSU) in Raleigh, NC. I am Director of NCSU's Electro-Mechanics Research Laboratory (EMRL), and I have been involved with electromechanics research and development for more than 30 years. My research focuses primarily on

design, specifically designing devices that incorporate both electrical components (sensors, actuators, microprocessors, etc.) and mechanical components (mechanisms, linkages, structures, etc.).

8. I received a Ph.D. (1996) in Mechanical Engineering from the University of Texas at Austin, a M.S. (1987) in Mechanical Engineering from Virginia Tech, and a B.S. (1986) in Mechanical Engineering from Louisiana State University. At the University of Texas at Austin, I specialized in electromechanics research and development, working as a post-doctoral research engineer at the University of Texas Center for Electromechanics.

9. I have over 30 years of design, development and consulting expertise covering a wide range of industries and technologies. During that time, I have maintained a consistent focus on mechanical and electromechanical design. I have directed more than \$7 million of federally and industrially sponsored research. These projects have resulted in numerous peer-reviewed journal and conference publications, multiple patents and corporate license agreements to facilitate technology transfer to industry.

10. I am a named inventor on several U.S. patents:

- U.S. Patent No. 12,184,123—“Three-dimensional airgap electric machines employing winding embedded liquid cooling”
- U.S. Patent No. 9,316,189—“Fuel injection device for an internal combustion engine, and associated method”

- U.S. Patent No. 9,308,350—“Active catheter device and associated system and method”
- U.S. Patent No. 8,579,806—“Force-determining retraction device and associated method”
- U.S. Patent No. 8,295,950—“Intelligent power management system”
- U.S. Patent No. 7,775,974—“Force-determining retraction device and associated method”

11. I am a member of the American Society of Mechanical Engineers (ASME), the Institute of Electrical and Electronics Engineers (IEEE), the American Society for Engineering Education (ASEE), Pi Tau Sigma (Mechanical Engineering Honor Society), Tau Beta Pi (Engineering Honor Society), Phi Kappa Phi (Academic Honor Society), and the National Fire Protection Association (NFPA, which publishes the National Electrical Code). I am Associate Editor of the ASME Journal of Dynamic Systems, Measurement and Control.

12. My education and experience have given me specialized expertise in the design and development of mechanical and electromechanical devices.

IV. INFORMATION CONSIDERED

13. In forming my opinions, I read and considered the '078 patent (EX-1001) and its prosecution history (EX-1007); the proposed construction of the terms of the claims, as set forth in the Petition; and the other materials referenced herein, including:

Exhibit No.	Description of Document
EX-1001	U.S. Patent No. 12,133,078 B2 to Graham Dugoni (filed March 14, 2024, issued October 29, 2024) (“’078 patent”)
EX-1002	Declaration of Dr. Gregory Buckner (“Buckner Decl.”)
EX-1003	U.S. Patent Appl. Pub. No. 2003/0011466 to Samuel et al. (filed February 15, 2001, published January 16, 2003) (“Samuel”)
EX-1004	Korean Patent Laid-open No. 10-2007-0041248 to Hyo-jyn Shin (filed October 14, 2005, published April 18, 2007) (“Shin”)
EX-1005	U.S. Patent Appl. Pub. No. 2014/0298492 to Simpson (filed March 14, 2014, published October 2, 2014) (“Simpson”)
EX-1006	International Publication No. WO 2014/122001 A1 to Theobald (filed January 20, 2014, published August 14, 2014) (“Theobald”)
EX-1007	Prosecution History of U.S. Patent No. 12,133,078 B2
EX-1008	U.S. Patent Appl. Pub. No. 2012/0187003 to Stewart et al. (filed January 21, 2011, published July 26, 2012) (“Stewart”)
EX-1009	U.S. Patent No. 3,851,506 to Simon et al. (filed December 29, 1972, issued December 3, 1974) (“Simon”)
EX-1010	U.S. Patent No. 5,977,876 to Coleman (filed August 13, 1998, issued November 2, 1999) (“Coleman”)
EX-1011	U.S. Patent No. 5,426,419 to Nguyen, et al. (filed January 14, 1993, issued June 20, 1995) (“Nguyen”)
EX-1012	U.S. Patent No. 6,218,929 to Furuta et al. (filed June 10, 1998, issued April 17, 2001) (“Furuta”)
EX-1013	Prosecution History of U.S. Patent No. 9,819,788 B2
EX-1014	Defendants’ Opening Claim Construction Memorandum filed June 6, 2025 in Civ. A. No. 1:24-cv-01326
EX-1015	Yondr, Inc.’s Responsive Claim Construction Brief filed June 27, 2025 in Civ. A. No. 1:24-cv-01326
EX-1016	Defendants’ Reply Claim Construction Memorandum filed July 11, 2025 in Civ. A. No. 1:24-cv-01326
EX-1017	U.S. Patent No. 9,819,788 B2 to Dugoni (filed April 21, 2015, issued

	November 14, 2017) (“the ’788 patent”)
EX-1018	U.S. Patent No. 6,499,638 to Campbell (filed July 17, 2001, issued December 31, 2002) (“Campbell”)
EX-1019	U.S. Patent No. 6,608,548 to Pellaton (filed May 22, 1998, issued August 19, 2003) (“Pellaton”)
EX-1020	U.S. Patent No. 7,277,726 to Ahya (filed May 3, 2004, issued October 2, 2007) (“Ahya”)

14. I performed my own analysis of the prior art identified herein and independently came to my own conclusions.

V. LEGAL STANDARDS

15. My understanding of the legal principles applicable to patentability based on 35 U.S.C. §§ 101, 102 103, and 112 as set forth below.

A. Level of Ordinary Skill in the Art

16. The claims and specification of a patent are to be read and construed through the eyes of a person of ordinary skill in the art (“POSA”) at the time the invention was made. To determine the appropriate level of one of ordinary skill in the art, the following factors may be considered: (a) the types of problems encountered by those working in the field and prior art solutions thereto; (b) the sophistication of the technology in question, and the rapidity with which innovations occur in the field; and (c) the educational level of active workers in the field.

B. Claim Construction

17. In an invalidity analysis, in order to assess whether a certain claim element is present in the prior art, the claim element must first be construed, and

then the prior art must be evaluated to determine whether it satisfies the properly-construed element of the claim. A patent claim is construed from the perspective of a POSA at the time of the invention, taking into account the claim language, the teachings of the patent specification, and the patent's prosecution history.

18. For the sake of my analysis, unless otherwise noted below, I have adopted Be Smarter's proposed constructions. I have read Patent Owner Yondr, Inc.'s ("Yondr") proposed constructions in the district court action pending in the Western District of Texas (the "WDTX Action").

C. Invalidity for Lack of Patent Eligibility

19. I understand that 35 U.S.C. § 101 defines patent-eligible subject matter as "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof" I further understand that the Supreme Court has held that laws of nature, physical phenomena, and abstract ideas are excluded from the scope of patent-eligible subject matter under 35 U.S.C. § 101 and that only new and inventive applications of laws of nature, physical phenomena, and abstract ideas are patent-eligible.

20. I understand that the Supreme Court in *Alice* distinguished between the exceptions to patent eligibility and patent-eligible subject matter as follows:

[I]n applying the § 101 exception, we must distinguish between patents that claim the 'buildin[g] block[s]' of human ingenuity and those that integrate the building blocks into something more, thereby 'transform[ing]' them into a patent-eligible invention. The former

‘would risk disproportionately tying up the use of the underlying’ ideas, and are therefore ineligible for patent protection. The latter pose no comparable risk of pre-emption, and therefore remain eligible for the monopoly granted under our patent laws.

Alice Corp. v. CLS Bank Int’l, 134 S.Ct. 2347, 2354–55 (2014).

21. I understand that courts after *Alice* have applied a two-step analysis to determine whether patent claims lack patent-eligibility and are therefore invalid under § 101. The first step involves determining whether the claims at issue are directed to one of the patent-ineligible concepts. If it is determined in the first step that the claims are directed to an ineligible concept, then the second step involves consideration of whether the claims include an element or combination of elements—an “inventive concept”—that ensures the patent in practice amounts to “significantly more” than a patent on the ineligible idea itself. I understand that this involves looking at the claim limitations both individually and as a combination and that there must be additional features that are more than well-understood, routine conventional activity in order to satisfy the second step.

D. Anticipation

22. A patent claim is invalid as being “anticipated” under 35 U.S.C. § 102 if each limitation of the claim is disclosed explicitly or inherently in a single prior art reference. I further understand that a limitation is disclosed inherently if it is necessarily present in the prior art reference or is the natural result flowing from the disclosure of the prior art reference.

E. Obviousness

23. A patent claim is invalid as being “obvious” under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are such that the claimed subject matter as a whole would have been obvious to a POSA at the time the invention was made. I also understand that in order to assess whether a claim would have been obvious in light of the prior art, I must step back in time and adopt the viewpoint of the hypothetical POSA when the invention was unknown and just before it was made, which in this case is the timeframe prior to April 21, 2015. I must then make a determination whether the claimed invention “as a whole” would have been obvious at that time to that person.

24. The following factors are considered in determining whether a claimed invention is invalid as obvious over the prior art: (1) the scope and content of the prior art; (2) the level of ordinary skill in the art; (3) the differences between the claimed invention and the prior art and (4) any “secondary considerations” that may serve as evidence of nonobviousness, such as commercial success, long-felt but unsolved need, unsuccessful attempts by others in the field, copying of the claimed invention, unexpected and superior results, acceptance and praise by others, independent invention by others, and similar considerations.

25. A POSA is presumed to know all relevant prior art. A reference may be modified or combined with other references or with the POSA’s own knowledge if

the person would have found the modification or combination obvious. In considering whether a claim is obvious, I understand that I can take account of inferences and creative steps that a POSA would employ, the common knowledge of the art that such a person would possess, and whether there is a teaching, suggestion, or motivation to combine such references.

26. However, there is no rigid rule that a reference or combination of references must contain a “teaching, suggestion, or motivation” to combine references. Nevertheless, the “teaching, suggestion, or motivation” test can be a useful guide in establishing a rationale for combining elements of the prior art. This test asks whether there is an express or implied teaching, suggestion or motivation to combine prior art elements in a way that realizes the claimed invention, and that it seeks to counter impermissible hindsight analysis.

27. The combination of familiar elements disclosed in the prior art according to known methods is likely to be obvious when it does no more than yield predictable results. I understand that if a technique has been used to improve one product, and a POSA would recognize that it would improve similar products in the same way, using the technique is obvious unless its actual application is beyond the skill of a POSA. The proper analysis of obviousness determines whether a POSA would have a “reasonable expectation of success”—not an “absolute predictability” of success—in achieving the claimed invention by combining prior art references.

28. While there is no requirement that the prior art contain an express suggestion to combine known elements to achieve the claimed invention, a suggestion to combine known elements to achieve the claimed invention may come from the prior art as a whole or individually, as filtered through the knowledge of one skilled in the art. A POSA often will be able to fit the teachings of multiple references together like the pieces of a puzzle. Any need or problem known in the field and addressed by the reference can provide a reason for combining the elements in the manner claimed.

29. If a POSA can implement a predictable variation and would see the benefit of doing so, that variation is likely to be obvious. In many fields, there may be little discussion of obvious combinations, and in these fields market demand—not scientific literature—may drive design trends. When there is a design need or market pressure, and there are a finite number of predictable solutions, a POSA has good reason to pursue those known options.

F. Indefiniteness

30. I understand that 35 U.S.C. § 112(b) requires patent claims “particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.” I understand that the Supreme Court in *Nautilus* explained that a patent claim is indefinite and invalid under § 112(b) “if its claims, read in light of the specification delineating the patent, and the prosecution history,

fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 910 (2014).

VI. OVERVIEW OF THE '078 PATENT

A. The '078 Patent

1. Overview of the Specification

31. The '078 patent is titled “System and Apparatus for Selectively Limiting User Control of an Electronic Device” and lists Graham Dugoni as both the Applicant and Inventor. EX-1001, Title page. The '078 patent was filed as Application No. 18/604,847 on March 14, 2024 and issued on October 29, 2024. EX-1001, Title page.

32. The Abstract of the '078 Patent summarizes its disclosures as follows:

A system and apparatus for selectively limiting user control of a mobile electronic device are provided. In an embodiment, the apparatus may be a case sized to receive a mobile electronic device, the case having a locking means to at least partially secure an opening thereof. When engaged, the locking means may be physically impenetrable by the user of the mobile electronic device and may further be configured to engage and disengage in the presence of one or more pre-determined conditions. For example, the lock may engage when the case is detected within a certain geographical region or even during a specified time. It is contemplated that providing disclosed systems and apparatuses may reduce undesirable behavior at communal events by eliminating distractions posed by mobile electronic devices and preventing unauthorized recordings, which together may enhance overall engagement at and enjoyment of such events.

EX-1001, Abstract.

33. In the specification, the '078 patent has a section entitled “Related U.S. Application Data,” which notes that its application was a:

Continuation of application No. 18/517,675, filed on Nov. 22, 2023, which is a division of application No. 16/813,437, filed on March 9, 2020, which is a continuation of application No. 15/704,425, filed on Sep. 14, 2017, now Pat. No. 10,623,957, which is a continuation of application No. 14/692,530, filed on Ap. 21, 2015, now Pat. No. 9,819,788.

EX-1001, pp. 1–2.

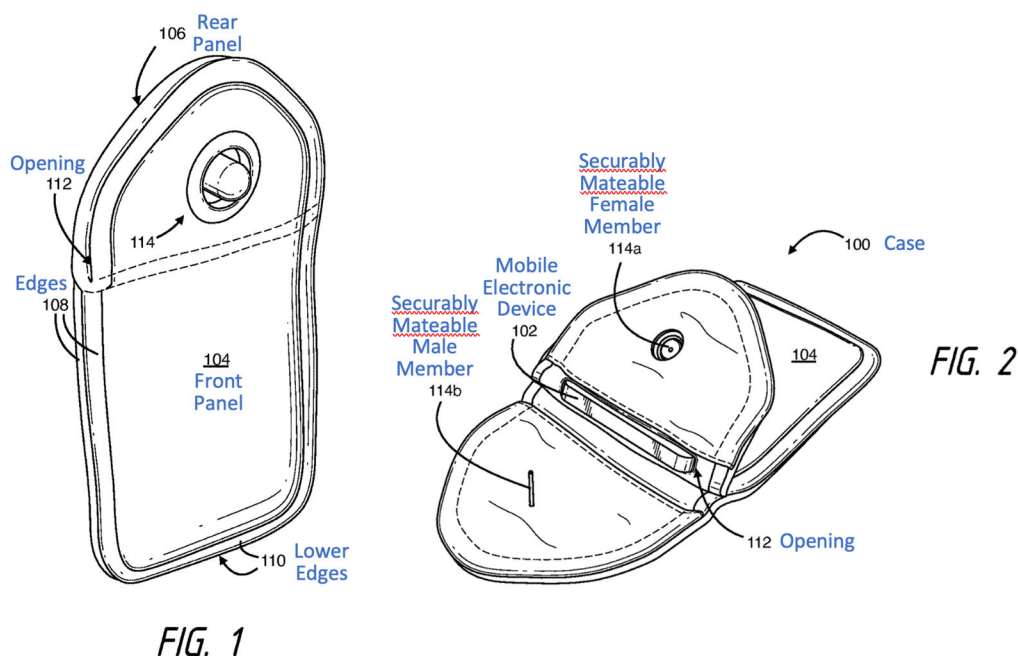
34. The '078 patent describes its technical field as relating to systems and apparatuses “for limiting functionality of personal electronic devices and, more particularly, to locking cases and other techniques that selectively limit a user’s ability to access and control such electronic devices until predetermined conditions, such as geographic location and passage of time, are met.” EX-1001, 1:33–39.

35. In the Background, the '078 patent acknowledges prior art attempts made to limit use of mobile electronic devices, including shutting off a cellphone and preventing its user from turning it on within a restricted area. EX-1001, 1:63–67. The '078 patent characterized that solution as a geographically limited application that was “also deficient because it fails to block the screen to diminish possible temptation to use the device.” EX-1001, 2:5–8.

36. The '078 patent further states that other attempts to discourage the use of mobile electronic devices “at communal events and in certain venues” such as providing signs and instructions or requiring people to leave them at home, turn them

off or hand them to event staff have been ineffective and met with resistance. EX-1001, 2:9–21.

37. As a purported solution to the problem of “limiting access to and control of personal mobile electronic devices within certain geographic locations or even during specified periods of time,” the ’078 patent describes “a case sized to accommodate a mobile electronic device.” EX-1001, 2:31–44. Specifically, the ’078 patent describes a case having a front and rear panel secured together along longitudinally opposed side edge and laterally opposed lower edges to form an opening to receive an electronic device, such as shown in Figures 1 and 2 (to which I have added annotations in blue):



EX-1001, Figs. 1–2, 2:43–49, 5:50–6:2; *see also* EX-1001 at Figs. 3–4.

38. The '078 patent further discloses that this case may include a locking means to render the device inaccessible to the user until a predetermined condition, such as geographic location or timing, is met. EX-1001, 2:50–3:5. For example, the '078 patent describes that in one embodiment, the case may render the mobile electronic device inaccessible during an event such as a show or athletic competition within a concert hall, center, arena, or similar venue with the locking means only becoming disengageable if the user leaves the venue or at such a time as the event is over. EX-1001, 2:65–3:5.

39. The '078 patent alternatively discloses the locking means could be remotely engageable and disengageable via the use of an RFID receiver or a microprocessor equipped to receive Bluetooth or wireless signals. EX-1001, 3:5–31, 6:35–7:51. The '078 patent also teaches that in some embodiments the case could be manually unlocked by “venue staff.” EX-1001, 3:7–10.

40. Referring to Figures 1–4, the '078 patent describes that case 100 may be sized to accommodate a mobile electronic device 102. EX-1001, 5:58–61. The '078 patent describes that the mobile electronic device could be “a cell phone, smart phone, or tablet computer but may also be embodied in any one of a wide variety of wired and/or wireless computing devices.” EX-1001, 8:36–39.

41. The '078 patent further describes that the case includes a front panel 104 and a rear panel 106 that are secured together along longitudinally opposed side

edges 108 and laterally opposed lower edges 110 as shown in Figure 1 above. EX-1001, 5:61–64.

42. The '078 patent notes that even though the illustrations show a “soft, flexible case,” other configurations for the case are contemplated such as “a rigid shell or box having a securable, opening to receive a mobile electronic device.” EX-1001, 6:3–11. This is similar to the prior art disclosures I discuss below, which together indicate persons of ordinary skill in the art regularly contemplated the term “case” to have a broad meaning that could refer to a “soft, flexible case” or a more “rigid shell or box” structure similar to a briefcase or small piece of luggage.

43. The '078 patent describes one embodiment of a locking means as “opposing plates disposed on or within the front and rear panels 106, 108 of the case 100” and that for locking, “each opposing plate has one of a securably mateable female 114a and male 114b member.” EX-1001, 6:21–25. However, the '078 patent discloses that other locking means such as “magnetic plates, selectively releasable mesh, lockable zippers” or a “key operated latch” could be used. EX-1001, 6:25–40.

44. The '078 patent further describes that the case may include “means for unlocking the case” that together with the locking means enable the automatic locking and unlocking of the case “within and outside of a defined geographical region” or in response to the existence of a predetermined condition relating to the passage of time. EX-1001, 7:5–61.

2. Claims

45. The '078 patent contains 20 claims. Claims 1, 9, and 15 are independent claims. Of the dependent claims at issue, claims 2–5 depend from claim 1, claims 10–11 depend from claim 9, and claims 16 and 19 depend from claim 15. For purposes of my analysis, bold labels have been added to the claims below in order to have a shorthand for referring back to parts of each claim.

46. Independent claim 1 of the '078 patent is:

1 (preamble) A case comprising:

1(a) a shell defining a cavity sized to accommodate a mobile device, the shell having an opening to receive the mobile device; and

1(b) a lock positioned proximate to the opening of the shell, the lock configured to render the mobile device at least partially inaccessible upon the lock being locked with the mobile device within the cavity of the shell,

1(c) the lock further configured to unlock to enable access to the mobile device based on a predetermined condition associated with a geographic region.

47. Dependent claim 2 of the '078 patent is:

2. The case of claim 1, wherein the predetermined condition is further associated with a time period.

48. Dependent claim 3 of the '078 patent is:

3. The case of claim 1, wherein the geographic region corresponds to a physical position of the case respective to a geographic area of a venue.

49. Dependent claim 4 of the '078 patent is:

4(a) The case of claim 1, wherein the shell comprises: a front panel; and

4(b) a rear panel, the rear panel being connected to the front panel on each longitudinal edge and on a lateral edge distally opposed to the opening.

50. Dependent claim 5 of the '078 patent is:

5. The case of claim 1, wherein the lock is configured to unlock the case based on interaction with a detacher.

51. Independent claim 9 of the '078 patent is:

9 (preamble) A case comprising:

9(a) a shell defining a cavity sized to accommodate a mobile device, the shell having an opening to receive the mobile device; and

9(b) a lock positioned proximate to the opening of the shell, the lock configured to at least partially secure the opening of the shell, the lock being further configured to lock the shell and render the mobile device at least partially inaccessible,

9(c) wherein the lock is further configured to unlock to enable access to the mobile device in accordance with a predetermined condition associated with a geographic region.

52. Dependent claim 10 of the '078 patent is:

10. The case of claim 9, wherein the predetermined condition is further associated with a time period, wherein the geographic region corresponds to a physical position of the case respective to a geographic area of a venue.

53. Dependent claim 11 of the '078 patent is:

11(a) The case of claim 9, wherein the shell comprises: a front panel; and

11(b) a rear panel, the rear panel being connected to the front panel on each longitudinal edge and on a lateral edge distally opposed to the opening.

54. Independent claim 15 of the '078 patent is:

15 (preamble) A system comprising:

15(a) a case sized to receive a user's mobile electronic device, the case including:

15(b) a front panel having a first set of longitudinal edges, a first top edge and a first bottom edge, and

15(c) a rear panel having a second set of longitudinal edges a second top edge and a second bottom edge, wherein the first set of longitudinal edges are respectively secured to the second set of longitudinal edges and the first bottom edge is secured to the second bottom edge to define an opening of the case for receiving a mobile electronic device; and

15(d) a lock proximately located to the opening of the case, the lock configured to at least partially secure the opening and render the user unable to access the mobile electronic device until a predetermined condition is met,

15(e) the predetermined condition being associated with a physical presence of the case being outside of a defined geographic region.

55. Dependent claim 16 of the '078 patent is:

16(a) The system of claim 15, wherein the lock comprises a female plate; and

16(b) a male plate, wherein the female plate and the male plate are respectively disposed on the front panel and the rear panel, wherein the female plate and the male plate are configured to securely mate.

56. Dependent claim 19 of the '078 patent is:

19. The case of claim 15, wherein the predetermined condition is further associated with: a passage of time.

3. Claim Terms

57. Claims 1 and 9 of the '078 patent contain the phrase “configured to unlock to enable access to the mobile device based on/in accordance with a predetermined condition.” EX-1001, cls. 1, 9. I understand that in the pending litigation, Be Smarter and Yondr have agreed that for purposes of this claim phrase “based on” and “in accordance with” have the same meaning. EX-1014-008. I have not seen anything in the '078 patent or its prosecution history to suggest otherwise.

58. I further understand that Be Smarter is asserting that the proper construction of this “configured to” phrase is “programmed to unlock the case upon satisfying a predetermined condition (as also defined by Be Smarter). That construction is consistent with my analysis of the claims and specification of the '078 patent.

59. Specifically, claims 1 and 9 contemplate that the claimed lock is configured to unlock based on external signals, which indicate that a “predetermined condition” has been met. EX-1001, cls. 1, 9. The '078 patent specification describes embodiments that are programmed to respond to external triggers or signals. For example, in certain embodiments, the lock is equipped with electronic receivers such as RFID “configured to instruct the locking means to alternatively engage and disengage when it receives a signal from a proximity transmitter indicating the case

has respectively entered and exited [a] defined geographic region.” EX-1001, 3:10–31; *see also* EX-1001, 7:5–36 (describing a particular RFID embodiment). With specific reference to allowing unlocking of the lock based on a timing condition, the ’078 patent discusses the use of a transmitter to transmit a wireless signal, which a POSA would understand would also require a receiver in the lock to receive the transmitted signal and a means to act on that signal to cause the physical unlocking of the lock. EX-1001, 7:52–61. Claims 7 and 9 disclose that the “case further comprises a microprocessor for receiving wireless data signals to unlock the case,” and a POSA would understand that a microprocessor requires programming. EX-1001, 11:1–3, 11:34–37. The ’078 patent specification also expressly acknowledges that programming may be required in order to instruct or direct functions of the invention. EX-1001, 4:32–5:3.

60. I further understand that Be Smarter asserts that a lock that opens with a manual key (as opposed to an electronic key) would not be within the scope of the “configured to . . .” claim phrase. I agree with that assertion. This claim phrase requires the lock to unlock based on a “predetermined condition.” To a POSA “predetermined,” as used in this phrase, requires programming to determine if the necessary geographic and/or temporal condition has been met and to send/receive signals that cause the lock to open.

61. I understand that Be Smarter is asserting that the proper claim construction for “predetermined condition,” which is a limitation of each of the Challenged Claims, should be construed to mean “a specific pre-established requirement that must be satisfied before a user can regain access to his or her mobile electronic device/ mobile device.” That construction is consistent with how a POSA would understand “predetermined condition” as I set forth above.

62. In addition, Be Smarter’s proposed construction is consistent with the claim context itself. Independent claims 1 and 9 required that the lock be “configured to unlock to enable access to the mobile device based on/in accordance with a predetermined condition associated with a geographic region.” EX-1001, cls. 1, 9. Similarly, independent claim 15 requires that the lock be “configured to at least partially secure the opening and render the user unable to access the mobile electronic device until a predetermined condition is met, the predetermined condition being associated with a physical presence of the case being outside of a defined geographical region.” EX-1001, cl. 15. Thus, in claim 15, not only does the condition have to be *predetermined*, but the predetermined condition has to do with the case being outside of a *defined* geographical region. The condition cannot be “predetermined” unless it is a specific pre-established requirement that is used in the control of the lock. In other words, a POSA would understand that the pre-

established requirement is what the programming uses to determine whether to unlock.

63. Be Smarter’s proposed construction for “predetermined condition” is also consistent with the embodiments I discussed above with respect to the broader “configured to . . .” language of which “predetermined condition” is a part.

64. I further understand that the prosecution history is sometimes helpful in determining the meaning of a claim term or phrase. I have reviewed the prosecution history and summarize it below, but I have not identified anything in the prosecution history that suggests any meanings different from what I discussed above.

B. The Prosecution History of the ’078 Patent

65. The ’078 patent issued from U.S. Patent Application No. 18/604,847 (“the ’847 Application”). EX-1001, Cover. The Patent Owner filed for prioritized examination and the prosecution lasted less than a year. EX-1007-076 (Decision Granting Request for Prioritized Examination (Track I)).

66. After a preliminary amendment that canceled the original claims, claims 19–38 were pending when the first and only Office Action issued. EX-1007-078 (May 23, 2024 Office Action Summary).

67. On May 23, 2024, the Examiner rejected pending claims 19, 22, 23, 24, 26, 27, 29, 30, 32, 33, 35, and 38 as anticipated by U.S. Patent Application

Publication No. 2012/0187003 to Stewart (EX-1008, “*Stewart*”). EX-1007-080–085 (May 23, 2024 Office Action at 3–8).

68. The Examiner rejected claims 20, 21, 28, and 37 as obvious in light of *Stewart* combined with U.S. Patent No. 3,851,505 to Simon (EX-1009, “*Simon*”). EX-1007-087 (May 23, 2024 Office Action at 10). In doing so, the Examiner said that *Stewart* disclosed “all subject matter . . . except for the lock is configured to unlock the case based on a predetermined condition, the predetermined condition being at least a time period” and then took “Official Notice that a case which has a lock is configured to unlock the case based on a predetermined condition, the predetermined condition being at least a time period is well known and at leas[t] fifty years old.” EX-1007-087–088 (May 23, 2024 Office Action at 10–11). The Examiner then cited *Simon* as evidence for the proposition of which he took Official Notice. EX-1007-088 (May 23, 2024 Office Action at 11).

69. The Examiner also rejected claims 25, 31, and 36 in light of *Stewart* combined with U.S. Patent No. 5,977,8765 to Coleman (EX-1010, “*Coleman*”). In doing so, the Examiner said that *Stewart* disclosed all subject matter except for the claimed microprocessor and then took Official Notice “that a microprocessor for receiving wireless data signals to unlock the case for a predetermine[d] condition is more than two decade[s] old technology and well known as evidenced by Coleman.” EX-1007-089–090 (May 23, 2024 Office Action at 12–13). The Examiner further

stated that it “would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to incorporate the use the decides [*sic*] old use of a microprocessor for receiving wireless data signals to unlock the case of Stewart, et al in order to remotely open the case.” EX-1007-090 (May 23, 2024 Office Action at 13).

70. Finally, the Examiner rejected claim 34 in light of *Stewart* combined with U.S. Patent No. 5,426,419 to Nguyen et al. (EX-1011, “*Nguyen*”). The Examiner said that *Stewart* disclosed all subject matter except the requirements for a male and female plate disposed on the front and rear panels that are configured to securely mate. EX-1007-091 (May 23, 2024 Office Action at 14). The Examiner then took Official Notice that those requirements were “old, commercially available to the general public and well known to one below ordinary skill in the art” and provided *Nguyen* as evidence with specific reference to figures 1, 2, and 4B. EX-1007-092. The Examiner then noted it would have been “extremely obvious” to “incorporate the old, commercially available to the general public and well know[n]” technology to prevent opening of the *Stewart* case and withdrawal of the electronic device. EX-1007-092 (May 23, 2024 Office Action at 15).

71. The Examiner also rejected pending claims 19 and 20 on the ground of nonstatutory double patenting as being unpatentable over claims 1 and 2 of the ’788 patent because “it is clear that all the elements of the application claims are to be

found in patent claims (as the application claims fully encompasses patent claims)” and “the invention of claims of the patent is in effect a ‘species’ of the ‘generic’ invention of the application claims.” EX-1007-095–098 (May 23, 2024 Office Action at 18–21).

72. After an interview, the Examiner withdrew the rejection of pending claims 20, 28, and 37 because “the art of record does not disclose or make obvious the predetermined condition being both geographical region and a time period.” EX-1007-145 (Applicant-Initiated Interview Summary of August 23, 2024 Interview).

73. The Applicant then amended the remaining claims such that each either required a predetermined condition associated with a geographic region or with a physical presence of the case being outside of a defined geographic region. EX-1007-148–151 (September 4, 2024 Response to Non-Final Office Action at 2–5). The Applicant then argued that the claims were allowable given the amendments and the Examiner’s comments during the interview. EX-1007-152 (September 4, 2024 Response to Non-Final Office Action at 6).

74. The Examiner then allowed the claims and quoted the Applicant’s arguments from the response as the reasons for allowance. EX-1007-160–162 (September 24, 2024 Notice of Allowance at 1–3).

75. When the claims of the ’078 patent were issued, they were renumbered as follows:

Final Claim Number	Pending Claim Number
1	19
2	20
3	21
4	22
5	23
6	24
7	25
8	26
9	27
10	28
11	29
12	30
13	31
14	32
15	33
16	34
17	35
18	36
19	37
20	38

EX-1007-172 (Index of Claims).

76. The '078 patent then issued on October 29, 2024. EX-1001, Cover.

C. The Prosecution History of the '788 Patent

77. The '078 patent claims priority to and has very similar claims to U.S. Patent No. 9,819,788 (“the '788 patent”). For that reason, and because I also have extensively reviewed the '788 patent prosecution history in connection with my declaration submitted in IPR2025-00970, I include a summary of the '788 patent prosecution history below.

78. In the prosecution history of the application (U.S. Patent Application No. 14/692,530) that led to the '788 patent, the first office action was issued by the Patent Office on October 3, 2016. EX-1013-044 (October 3, 2016 Office Action). Pending claims 1, 7, and 10 were rejected under 35 U.S.C. § 102(a)(1) as being anticipated by *Stewart*, which the Examiner noted disclosed “a case (figure 1, #10) for selectively limiting a user’s ability to control a mobile electronic device (#11), comprising a front and a rear panel (figure 3) each having first and second longitudinally opposed side edges and laterally opposed lower edges (#16 or 24), the first, second, and lower edges being secured together to define an opening for receiving a mobile electronic device (#14) and a locking means (#16 or 24) for at least partially securing the opening so that the electronic device (#14) is rendered inaccessible to the user, the locking means (#16, or 24) being further non-disengageable by the user of the mobile electronic device (#14) until a predetermined

condition is met (paragraphs 22 and 26).” EX-1013-048–049 (October 3, 2016 Office Action, at 4–5).

79. The Examiner specifically relied on *Stewart’s* teaching of a case for securing a mobile electronic device until a predetermined condition is met including as shown in *Stewart’s* Figure 1:

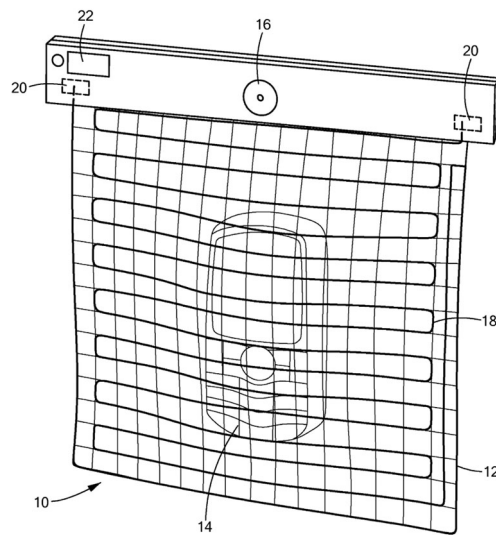


FIG. 1

EX-1013-048–049 (October 3, 2016 Office Action, at 4–5).

80. Pending claims 2 and 12 were rejected under 35 U.S.C. § 103 as unpatentable over *Stewart* in combination with U.S. Patent No. 6,499,638 (“*Campbell*,” EX-1018) because it would have been obvious to “incorporate the use of locking means compris[ing] a female and a male plate, the plates respectively disposed on each of the front and rear panels and configured to securably mate with one another” from *Campbell* with the disclosed in *Stewart* “for the purpose of

securing locking two plates together without much play between the plates.” EX-1013-051–053 (October 3, 2016 Office Action, at 7–9).

81. Pending claims 3, 4, 13, and 14 were rejected under 35 U.S.C. § 103 as unpatentable over *Stewart* in combination with *Campbell* and in further view of U.S. Patent No. 5,977,876 (“*Coleman*,” EX-1010) for its disclosures regarding use of an RFID tag and a radio transmitter to remotely disengage a locking means. EX-1013-054 (October 3, 2016 Office Action, at 10).

82. Pending claims 5 and 15 were rejected under 35 U.S.C. § 103 as obvious over *Stewart* in view of U.S. Patent No. 6,218,929 (“*Furuta*,” EX-1012), which taught the use of a predetermined condition that was physical presence outside of a defined geographical region for the purpose of unlocking. EX-1013-055–056 (October 3, 2016 Office Action, at 11–12).

83. Pending claims 6 and 16 were rejected under 35 U.S.C. § 103 as obvious over *Stewart* in view of U.S. Patent No. 6,608,548 (“*Pellaton*,” EX-1019), which disclosed the use of a predetermined condition that was the passage of time. EX-1013-057 (October 3, 2016 Office Action, at 13).

84. Finally, pending claim 17 was rejected in the first office action as unpatentable under 35 U.S.C. § 103 over *Stewart* in view of U.S. Patent No. 7,277,726 (“*Ahya*,” EX-1020), which disclosed remotely controlling a mobile

electronic device including the ability to send instructions to disable one or more functions. EX-1013-058–059 (October 3, 2016 Office Action, at 14–15).

85. On March 3, 2017, the Applicant responded by amending the claims, adding “user’s” as a modifier to “electronic device” in claims 1, 7, and 10 and arguing that *Stewart* did not teach “limiting a user’s access to his own property.” EX-1013-069–071, 073 (March 3, 2017 Response, at 2–4, 6). The Applicant also argued that the Examiner failed to establish a *prima facie* showing of obviousness regarding the *Stewart* combinations. Specifically, the Applicant argued that the Examiner failed to establish a teaching, motivation, or suggestion to combine the prior art. EX-1013-074–076 (March 3, 2017 Response, at 7–9). The Applicant did not otherwise address *Stewart* or the teachings of the other prior art raised by the Examiner.

86. The Examiner issued a Final Rejection on May 5, 2017. EX-1013-083–106 (May 5, 2017 Final Rejection). The Examiner again rejected pending claims 1–7, 10, and 12–17 under § 102 and § 103 over *Stewart* and the prior cited *Stewart* combinations. EX-1013-087–099 (May 5, 2017 Final Rejection, at 4–16).

87. However, rather than rejecting pending claims 8, 9, and 11, the Examiner instead objected to them because they depended on already-rejected claims and indicated they would be allowable if re-written in independent form. EX-

1013-099 (May 5, 2017 Final Rejection, at 16). Below, I excerpt the Applicant's amendments made to claims 8, 9, and 11 prior to issuance of the Final Rejection:

8. (Currently Amended) The case of claim 7, wherein the predetermined condition is physical presence of the case outside of a defined geographical region.

9. (Original) The case of claim 7, wherein the predetermined condition is the passage of time.

11. (Original) The system of claim 10, wherein the case comprises:
a front and a rear panel each having a first and second longitudinally opposed side edges and laterally opposed lower edges, the first, second, and lower edges being secured together to define an opening for receiving a mobile electronic device; and
a locking means for at least partially securing the opening.

EX-1013-070 (March 3, 2017 Amendment and Response to Office Action, at 3).

88. It is worth noting that in the Final Rejection the Examiner did not withdraw the rejections of pending claims 1, 5, and 6, which I excerpt below for comparison to the “objectionable” then-pending claims 8, 9, and 11:

1. (Currently Amended) A case for selectively limiting a user's ability to control [[a]]such user's own mobile electronic device, comprising:

a front and a rear panel each having first and second longitudinally opposed side edges and laterally opposed lower edges, the first, second, and lower edges being secured together to define an opening for receiving a mobile electronic device; and

a locking means for at least partially securing the opening so that the user's electronic device is rendered inaccessible to the user, the locking means being further non-disengageable by the user of the mobile electronic device until a predetermined condition is met.

5. (Currently Amended) The case of claim 1, wherein the predetermined condition is physical presence of the case outside of a defined geographical region.

6. (Original) The case of claim 1, wherein the predetermined condition is the passage of time.

EX-1013-069–070 (March 3, 2017 Amendment and Response to Office Action, at 2–3).

89. There seems to be no logical reason for the Examiner to have *rejected* then-pending claims 1, 5, and 6, but to have merely *objected to* claims 8, 9, and 10 with the suggestion that they be re-written in independent form, especially considering his rejection of claims 7 and 10 from which these claims depended.

90. In the Final Rejection, the Examiner also rejected Applicant’s argument that adding “user’s” to the pending claims differentiated the claims from the disclosures in *Stewart*. EX-1013-104–106 (May 5, 2017 Final Rejection, at 21–23).

91. In a response, the Applicant amended claims 8, 9, and 11 by re-writing those claims in independent form. EX-1013-119–121 (September 1, 2017 Response After Final Action, at 4–6). The Examiner then issued a Notice of Allowance with an AFCP 2.0 decision that checked box 1 (“All of the rejections in the most recent final Office action are overcome and a Notice of Allowance is issued herewith”). EX-1013-127, 133.

92. When the claims of the ’788 patent were issued, they were renumbered as follows:

Final Claim Number	Pending Claim Number
1	8
2	9
3	11
4	12
5	13
6	14
7	15
8	16
9	17

EX-1013-137 (Index of Claims).

93. The '788 patent then issued on November 14, 2017. EX-1013-147.

94. On August 24, 2022, the Applicant submitted a Certificate of Correction and stated that it “corrects minor errors in Claims 1 and 2” and suggested corrections as shown below:

Col. 10, lines 52-53 [Claim 1] “...electronic device; ...” should read — “...electronic device until a predetermined condition is met; ...”

Col. 10, lines 64-65 [Claim 2] “...electronic device; ...” should read — “...electronic device until a predetermined condition is met; ...”

EX-1013-172–174. The Applicant explained that when then-pending claims 8 and 9 (issued claims 1 and 2) were re-written to independent form that “due to a

typographical error, the language ‘. . . until a predetermined condition is met . . .’ was excluded from both claims.” EX-1013-172–173.

95. As my above summaries demonstrate, the Examiner appears to have carried through his mistake as to the claims of the ’788 patent in light of Stewart and Furata into the prosecution of similar claims in the ’078 patent. In other words, the Examiner should have rejected the ’078 patent claims (all of which have a geographic region limitation) in light of the combination of those references.

VII. LEVEL OF ORDINARY SKILL IN THE ART

96. It is my opinion that a person of ordinary skill in the art (“POSA”) as of the priority date for the ’078 patent would have possessed at least a bachelor’s degree in mechanical engineering, electrical engineering, or computer science and two or more years of experience in electromechanical product design. It is further my opinion that a person could have qualified with more formal education and less technical experience or *vice versa*.

VIII. OVERVIEW OF CERTAIN PRIOR ART

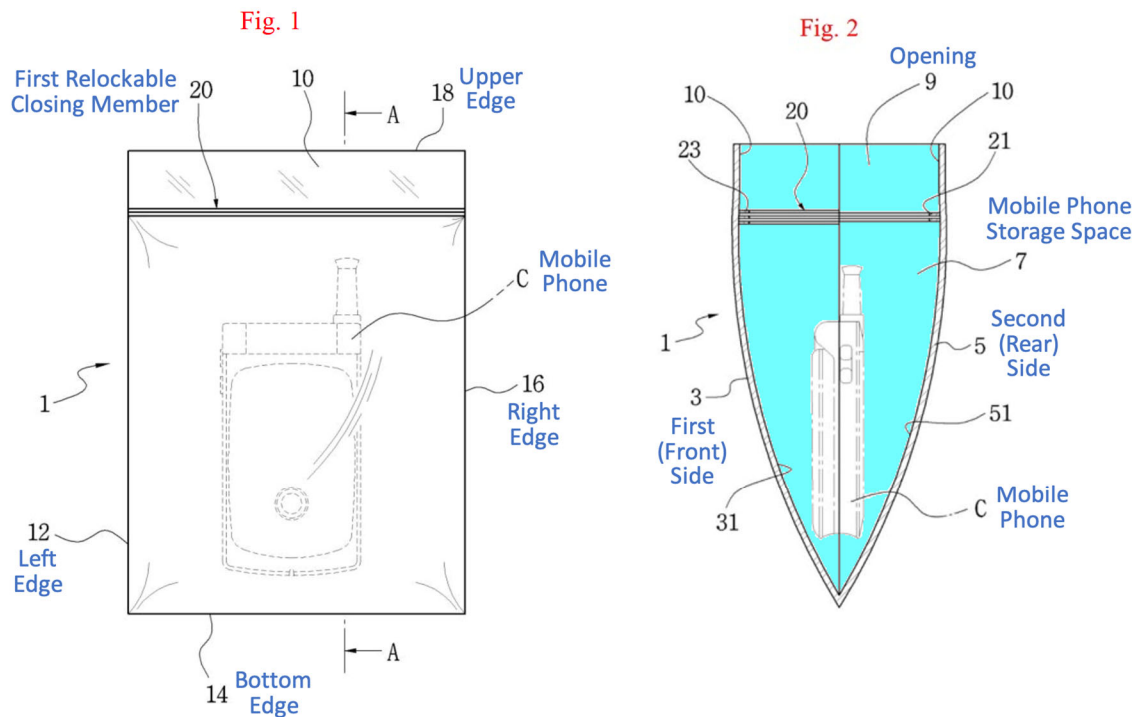
A. *Shin* (EX-1004)

97. I understand that Korean Patent No. 10-2007-0041248 (“*Shin*”), EX-1004, entitled “Radio Wave Blocking Envelope for Storing a Mobile Phone,” was published on April 18, 2007. As this date is prior to the effective filing date of the ’078 patent (April 21, 2015), I understand *Shin* is prior art to the ’078 patent.

98. *Shin* discloses a system for selectively limiting a user's ability to control such user's own mobile electronic device, a "radio wave blocking envelope for storing a mobile phone that prevents the mobile phone stored inside the envelope from receiving high frequency radio waves." EX-1004, Abstract. *Shin's* system can "temporarily store a mobile phone and prevent incoming calls from being received during storage, thereby preventing phone rings or vibration sounds in public places where silence is required." EX-1004, Abstract.

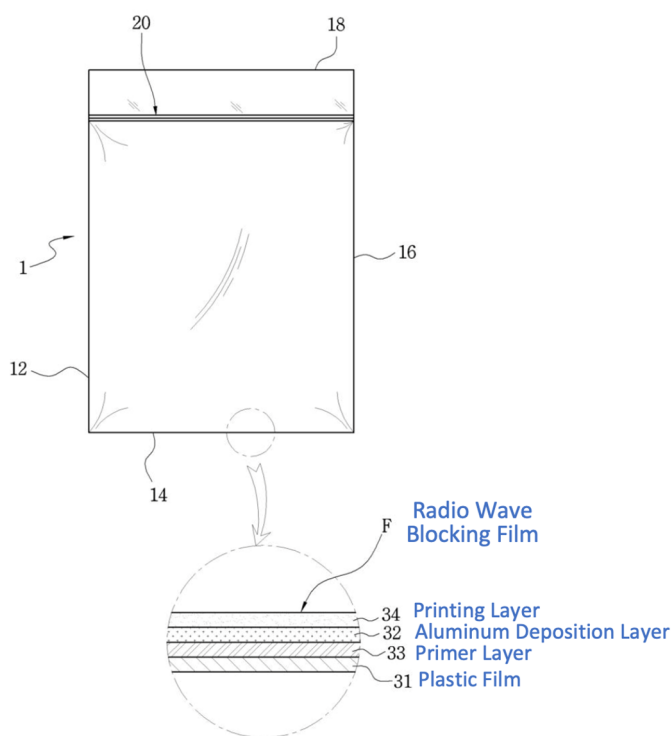
99. The case, or "envelope" of *Shin's* system, is dimensioned appropriately to receive the user's mobile device, and has "sufficient size to form a mobile phone storage space." EX-1004, Abstract. As shown in *Shin's* Fig. 1 ("Front view of a mobile phone storage envelope in a locked state") and Fig. 2 ("Cross-sectional view of the mobile phone storage envelope in an open state") below (to which I have added annotations in blue), this case has a front (3) and rear panel (5) each having first (12) and second (16) longitudinally opposed side edges and laterally opposed lower edges (14). The first, second, and lower edges of *Shin's* case are secured together to define an opening (9, highlighted in light blue) providing access to a mobile phone storage space (7, highlighted in light blue) for receiving a mobile electronic device (C), the case operative to become locked (Fig. 1) so that the user is unable to access his own mobile electronic device contained therein until a predetermined condition is met. *Shin's* case features a locking means (20) for at least

partially securing the opening, the locking means being further non-disengageable by the user of the mobile electronic device, and a means for unlocking the case (Fig. 2).



100. The first and second sides of *Shin's* case are made of a “radio wave blocking film including at least one or more conductive metal layers.” EX-1004, Specification, at 6. In one embodiment, shown in *Shin's* Fig. 3a below, this blocking film “comprises a plastic film layer 31 having a predetermined thickness (10–100 μm), an aluminum deposition layer 32 having a predetermined thickness (5–30 μm) vacuum-deposited thereon, and a primer layer 33 coated between the plastic film layer 31 and the aluminum deposition layer 32 to improve adhesion.” EX-1004, Specification, at 7.

Fig. 3a



101. The locking means (20) of *Shin's* case comprises a male plate (or “profile strip” 21) and a female plate (or “profile strip” 23) that are respectively disposed on each of the front and rear panels and configured to securely mate with one another “to lock the opening 9 of the envelope.” EX-1004, Specification, at 7.

102. *Shin* discloses a predetermined condition that must be met before the user is able to access his own mobile electronic device contained within the case: the passage of time. *Shin's* case comprises a “timer means that automatically opens a portion of the envelope after a predetermined time, for example, after the

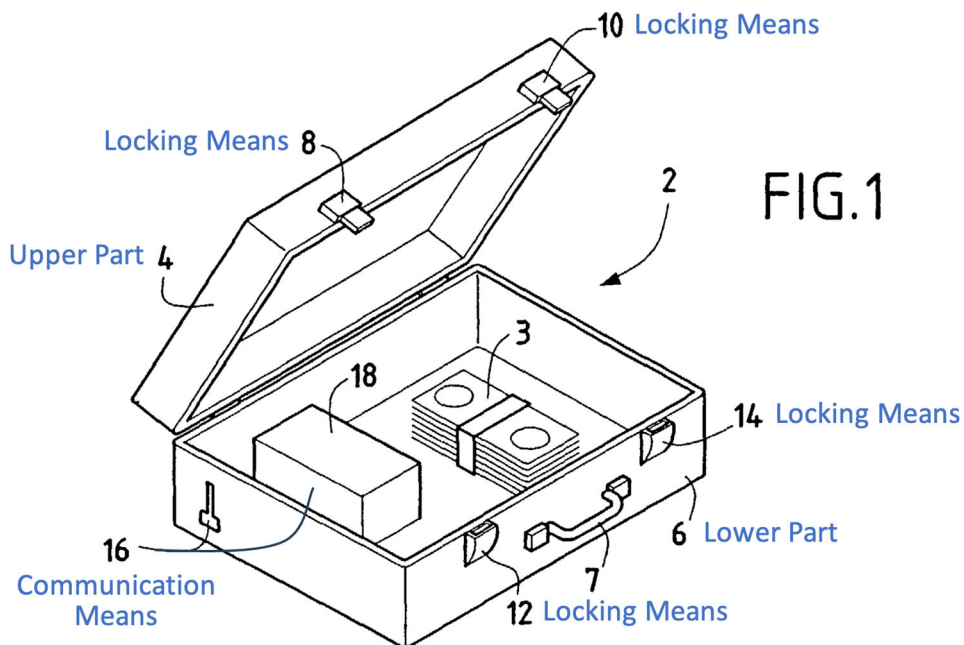
performance ends, allowing incoming calls from outside to be received.” EX-1004, Specification, at 10.

B. *Samuel* (EX-1003)

103. I understand that U.S. Publication No. 2003/0011466 (“*Samuel*”), EX-1003, entitled “Device and Method for Safe Transport of an Object,” was published on January 16, 2003, from an application filed on February 15, 2001. As both dates are prior to the effective filing date of the ’078 patent (April 21, 2015), I understand *Samuel* is prior art to the ’078 patent.

104. *Samuel* discloses devices for the securely transporting objects which can be remotely monitored, unlocked, and opened based on a predetermined condition, such as when the container reaches a specific location. EX-1003, [0014]–[0020], [0038], [0041], [0069], [0073], [0124], [0182], cls. 1, 18.

105. In one example, *Samuel* teaches using a case with two parts (4, 6) that can be closed by locking means (8, 10, 12, and 14 as shown in *Samuel*’s Figure 1, to which I have added annotations in blue):



106. In this example, communication means (16, 18) can send signals to a “monitoring system” (22) to track and control the opening and closing of the locking means (8, 10, 12, 14). EX-1003, Fig. 1, [0083], [0088]–[0090], [0105]–[0109].

107. Note that while the *Samuel* device shown in Figure 1 is a hard case, *Samuel* provides other exemplary devices. Specifically, *Samuel* expressly teaches the device could be a parcel type device made of a “flexible material” with an “envelope format”—*i.e.*, a pouch. EX-1003, [0091].

108. Finally, *Samuel* teaches that “GPS location means” could be used to track the location of the *Samuel* device. EX-1003, [0174]–[0178]. *Samuel* also teaches that the device may be equipped with means for sending and receiving RF signals to and from the monitoring system. *Id.*

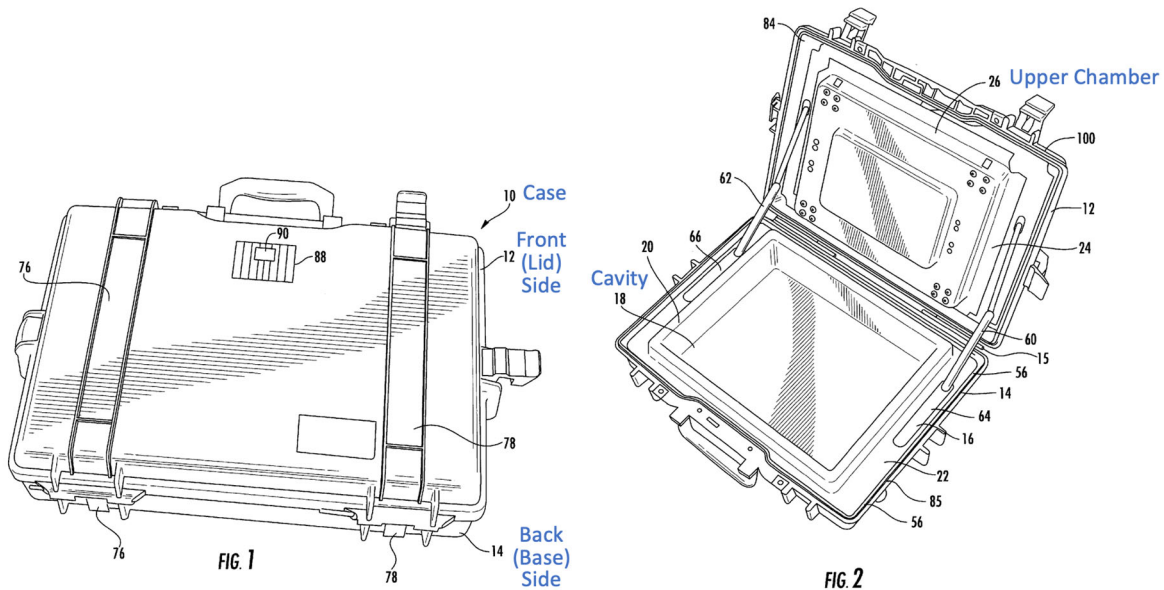
C. *Simpson* (EX-1005)

109. I understand that U.S. Patent 2014/0298492 to Simpson (“*Simpson*”), EX-1005, entitled “Security Case,” was published on October 2, 2014 from an application filed on March 14, 2014. As both dates are prior to the effective filing date of the ’078 patent (April 21, 2015), I understand that *Simpson* is prior art to the ’078 patent.

110. *Simpson* discloses a system for selectively limiting a user’s access to and ability to control such user’s own “valuable objects”, including mobile electronic devices, via a “a portable container which restricts access to the contents within the container to authorized individuals and enables the container to be tracked.” EX-1005, [0002]. The case, or “container” of *Simpson*’s system “is secure in its locked condition by locks which are preferably operated by an electronic key. The electronic key can be programmed to open the case or container dependent upon various different conditions, for example, location, time, ...” EX-1005, Abstract.

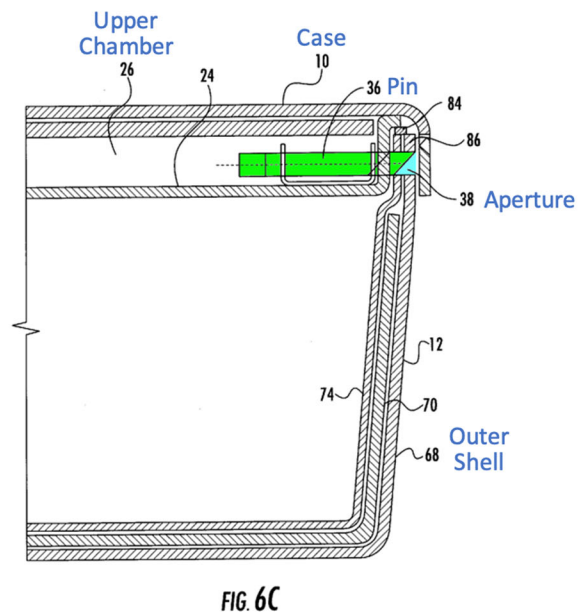
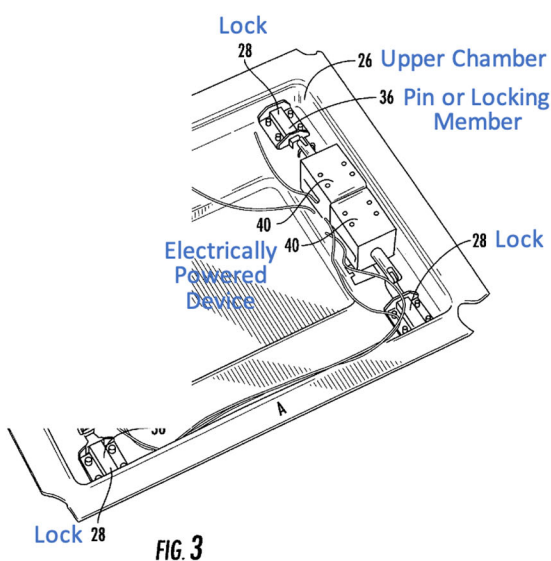
111. The case of *Simpson*’s system is dimensioned appropriately to receive the user’s mobile device (mobile phone, tablet computer, laptop computer, etc.), enabling the “storing and transporting” of the device “in a secure manner, the case comprising: a lid coupled to a base and cooperating therewith to define a closable storage chamber.” EX-1005, Claim 1. As shown in *Simpson*’s Fig. 1 (“a top

perspective view of the present invention”) and Fig. 2 (“a perspective view of the interior of the present invention”) below (to which I have added annotations in blue), this case (10) has a front (“lid” 12) and rear panel (“base” 14), each having first and second longitudinally opposed side edges and laterally opposed lower edges. The first, second, and lower edges of *Simpson’s* case define an opening (“cavity” 18) for receiving a mobile electronic device, the case operative to become locked (Fig. 1) so that the user is unable to access his own mobile electronic device contained therein until a predetermined condition is met.



112. As shown in *Simpson’s* Fig. 3 (“a view of the locking mechanism of the present invention”) and Fig. 6c (“a cross sectional view of a lower portion of the case”) below (to which I have added annotations in blue and highlighting), *Simpson’s* case features a locking means (28) housed within the upper chamber (26)

for at least partially securing the opening, the locking means being further non-disengageable by the user of the mobile electronic device, and a means for unlocking the case (Fig. 2). *Simpson's* locking means comprises opposing plates with securably mateable male (“pin” 36, highlighted in green) and female (“aperture” 38, highlighted in light blue) members, actuated by an “electronically powered device” (40), for the function of at least partially securing the opening of the case so that the electronic device is rendered inaccessible to the user and non-disengageable by the user of the secured device until a predetermined condition is met. “In the retracted or open position, the pin 36 does not extend into an aperture in the side of the lower portion 14 of the case. In the locked position, the pin 36 extends into the aperture 38 in the side of the lower portion.” EX-1005, Abstract, [0037].



113. The locking means of *Simpson*'s case includes a "GPS type of location device," which enables the location of the case to be "tracked from remote locations." EX-1005, [0006]. The locks (28) are "preferably operated by an electronic key" which can be "programmed to open the case or container dependent upon various conditions, for example location, time, identification of operator, etc." EX-1005, Abstract. This electronic key "can be disabled or enabled from a signal transmitted by a satellite, a cellphone or a radio frequency transmission." EX-1005, [0039].

114. Note that while the *Simpson* device shown in Figure 1 is a hard case, *Simpson* teaches that the case or container can be "made from different materials which are impermeable and resistant to heat, drilling and ballistic impact." EX-1008, [0006].

D. *Theobald* (EX-1006)

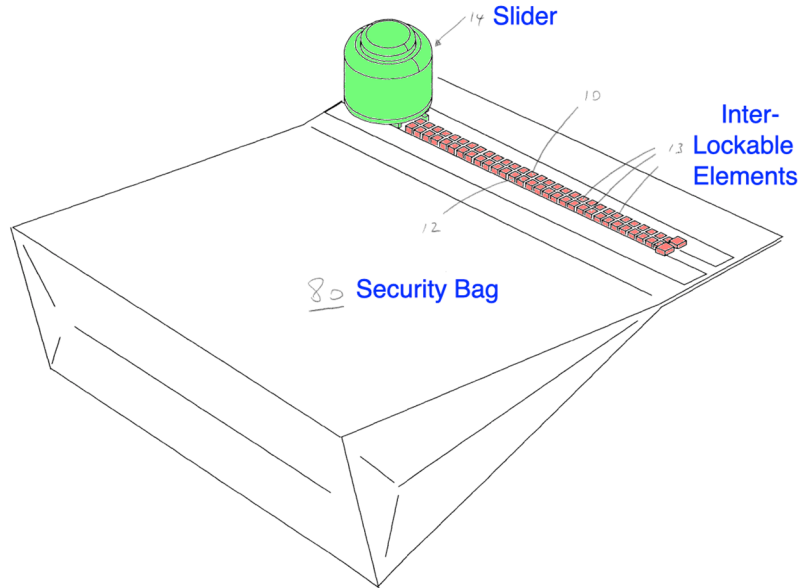
115. I understand that PCT Publication No. WO2014/122001 ("*Theobald*"), EX-1006, entitled "Magnetically Operated Locking Slider for Zipper," was published on January 20, 2014, from an international application filed on February 7, 2013. As both dates are prior to the effective filing date of the '078 patent (April 21, 2015), I understand *Theobald* is prior art to the '078 patent.

116. *Theobald* discloses a zipper with a slider that selectively locks or unlocks based on magnetic actuation. EX-1006, Abstract. Specifically, *Theobald*

describes a slider comprising a control member within a casing, where the control member is movable between a locking position and an unlocking position by the application of magnetic force. EX-1006, Abstract, p. 8. When in the locking position, a locking pin passes through an aperture, thus preventing movement of the slider in the opening direction. EX-1016, pp. 4, 7.

117. *Theobald* teaches that the slider is normally in a locking configuration, preventing unauthorized opening of the zipper, and the control member is at least partially enclosed by a casing that substantially prevents manual tampering or accidental unlocking. EX-1006, pp. 2–4, 7, 9. To unlock, a magnetic actuation force, applied via a strong permanent magnet, is used to move the control member from the locking position to the unlocking position, thus retracting the locking pin and enabling movement of the slider in the opening direction. EX-1006, pp. 3–4, 8–9.

118. In one embodiment, *Theobald* describes how this magnetically operated locking zipper can be “mounted on a bag 80 which is conveniently used as a security bag”, as shown in *Theobald’s* Figure 6 below, to which I have added annotations in blue and highlighted the slider (14) in green and the zipper’s interlockable elements (13) in red:



EX-1006, Fig. 6, pp. 4–5, 9.

119. In this example, the zipper can be unlocked using “a detaching magnet 78 of a type that is commonly used in retail outlets to remove security tags from articles such as clothing.” EX-1006, p. 9.

E. *Stewart* (EX-1008)

120. I understand that U.S. Patent 2012/0187003 to Stewart et al. (“*Stewart*”), EX-1008, entitled “Soft Alarming Safer,” was published on July 26, 2012 from an application filed on January 21, 2011. As both dates are prior to the effective filing date of the ’078 patent (April 21, 2015), I understand that *Stewart* is prior art to the ’078 patent.

121. *Stewart* discloses a system for selectively limiting a user’s access to and ability to control “electronic and other high-priced items” or “products” via a “security device having a flexible material into which a product may be sealed and

unauthorized removal of the product triggers a security alarm.” EX-1008, Abstract. The case (“container” or “pouch”) of *Stewart’s* system “can operate in a locked or sealed orientation where product 14 is not accessible to customers” and “thereby prevent unwanted entry into pouch” EX-1008, [0022].

122. The “container” or “pouch” of *Stewart’s* system is dimensioned appropriately to receive “electronic and other high-priced items” (such as the mobile phone depicted in *Stewart’s* Figure 1 below, to which I have added annotations in blue), and comprises “a flexible material into which a product may be sealed and unauthorized removal of the product triggers a security alarm.” EX-1008, Abstract, [0004]. *Stewart’s* pouch (12) has a front (shown in Fig. 1) and rear panel, each having first and second longitudinally opposed side edges and laterally opposed lower edges. The first, second, and lower edges of *Stewart’s* case are secured together to define a “flexible housing” comprising “conductive material and an alarming device.” EX-1008, [0007]. When the seal (4) of the flexible housing is opened (as shown in Fig. 3, to which I have added annotations in blue) an opening provides access to a cavity (highlighted in light blue) for receiving a mobile electronic device. If opened “without deactivation of the alarming device [22]”, an electrical circuit initiates “activation of the alarming device.” EX-1008, [0007].

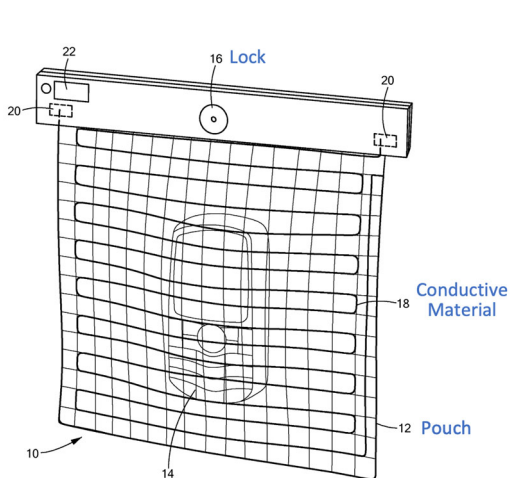


FIG. 1

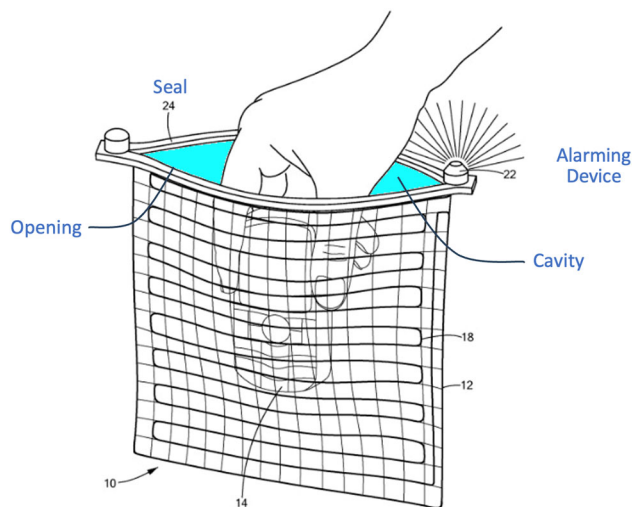


FIG. 3

123. As shown in Figs. 1 and 3 above, *Stewart's* “pouch 12 can operate in a locked or sealed orientation where product 14 is not accessible to customers. Lock 16 can secure a fold-down tab 16 to pouch 12 and thereby prevent unwanted entry into pouch 12. Lock 16 can be a magnetic lock similar to the type used in hard tags.” EX-1008, [0022]. *Stewart's* device further comprises “an unlocking mechanism to allow the product to be removed from within the flexible material without triggering the alarming device”, one embodiment being “existing detachers.” EX-1008, claim 5, [0022].

124. *Stewart's* security device can be configured to include “an electronic article surveillance (EAS) label affixed thereto, wherein the alarming device is triggered upon receipt by the EAS label of an EAS interrogation signal.” EX-1008, claim 6. Another embodiment further comprises “a radio frequency identification (RFID) element”. EX-1008, claim 7.

IX. MOTIVATIONS TO COMBINE

A. *Samuel* and *Shin*

125. *Samuel* provides an explicit motivation to combine the flexible security device structure described in *Shin* (*i.e.*, a mobile phone storage envelope) with the locking and unlocking mechanisms described in *Samuel*. Specifically, *Samuel* states:

The walls that define the transportation device of the invention can be made of *flexible plastics materials*, especially in the case of parcel type devices, or of a material such as rubber for devices *with an “envelope” format*. . . .

EX-1003, [0091]; *see also* EX-1003, [0021] (envelopes or parcels). Therefore, a POSA would have recognized *Samuel* acknowledging the rigid case depicted in its figures could be replaced by a more flexible envelope design, such as the envelope shown in *Shin*. *See also*, EX-1004, Figs. 1–14.

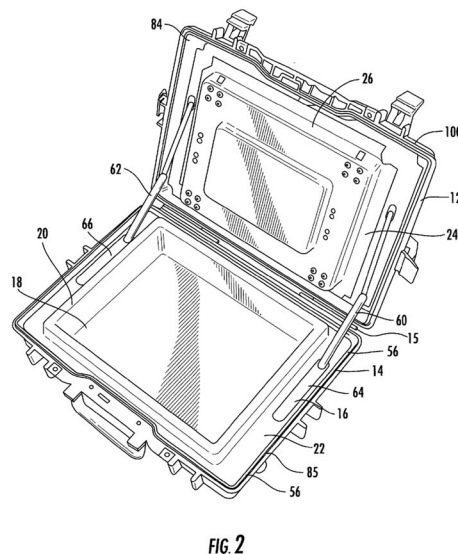
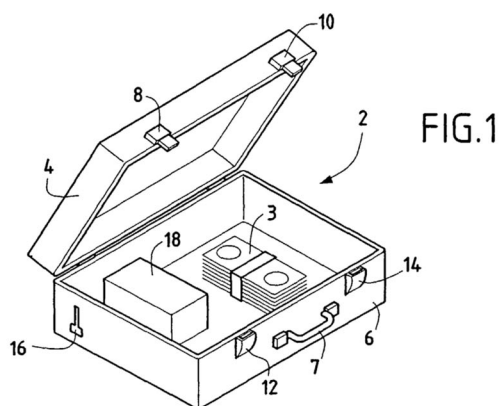
126. In addition, both *Samuel* and *Shin* teach ways to at least temporarily prevent unauthorized access to objects in such a case or envelope. EX-1003, [0009]–[0020]; EX-1004, Abstract, 6–7. Thus, a POSA would understand these references address the same subject matter and would look to both to evaluate potential options for solving the problem of how to secure and prevent unauthorized access to an object such as a mobile electronic device or other valuables. For example, like *Samuel*, *Shin* discloses securably mateable female and male members that function to secure the opening providing further motivation to combine *Samuel* and *Shin*.

127. Finally, a POSA would have viewed *Shin's* objective to block cellphone signals for a pre-set period of time (via a "timer means") to prevent use in public places and other venues as a motivation to combine *Shin's* envelope structure with *Samuel's* locking means to further limit the user's access to the cellphone stored in the *Shin* envelope for a pre-set period of time or in a specific geographic location (e.g., in a concert hall, church, or school). EX-1004, 5, 9.

B. *Samuel, Shin, and Simpson*

128. In addition to combining *Samuel* and *Shin* for the reasons described above (e.g., *Samuel* teaching the rigid case depicted in its figures could be replaced by a more flexible envelope design, such as the envelope shown in *Shin*, which results in the *Samuel* envelope), a POSA also would have been motivated to modify the *Samuel* envelope with disclosures from *Simpson* because *Simpson* describes a security case very similar to *Samuel* that accounts for advancements in wireless signal processing and locking/unlocking mechanisms since the publication of *Samuel*.

129. The security cases disclosed in *Samuel* and *Simpson* are very similar:



Samuel

Simpson

EX-1003, Fig. 1; EX-1005, Fig. 2. That is, *Samuel* and *Simpson* both describe cases, as depicted in the figures above, briefcase-type structures, designed for the secure storage and transportation of valuable objects. EX-1003, Fig. 1, [0001]–[0002],[0084], [0182]; EX-1005, Fig. 2, Abstract, [0002]–[0003]. Both also teach locking mechanisms (locks 8, 10, 12, 14 in *Samuel* and locks 28 in *Simpson*) that may be unlocked using electronic means. EX-1003, Abstract, [0012]–[0013][0083], [0089]–[0090], [0105]–[0109], cl. 1; EX-1005, [0037]–[0039]. Furthermore, both *Samuel* and *Simpson* teach that such unlocking may be dependent on certain conditions. EX-1003, [0073], [0109], [0124]–[0125], [0137]–[0141]; EX-1005, Abstract, [0039], [0045], [0056]. Thus, not only are *Samuel* and *Simpson* references in the same field, but they describe similar security cases that require a predetermined condition to be met before the case can be unlocked. For these

reasons, a POSA would have been motivated to combine the disclosures of *Samuel* with those of *Simpson* in designing a secure case to store and prevent unauthorized access to valuables.

130. *Samuel* also teaches the case's status and **location** may be monitored, including by GPS, and a POSA would understand *Samuel*'s monitoring of **location** may be a condition used to determine whether to send the unlock signal to the electronic means for unlocking. EX-1003, [0012]–[0013], [0038], [0067]–[0069], [0073], [0124]–[0125], [0174]–[0178]. *Simpson* similarly teaches its electronic key may be programmed to open the case depending on a location condition. EX-1005, Abstract, [0039]–[0040], [0045], [0056]. In addition, *Simpson* teaches the electronic key may be programmed to open the case depending on other conditions such as time or the identification of the operator. EX-1005, Abstract, [0039]. Thus, a POSA would have been motivated to start with *Samuel*, which pre-dates *Simpson*, and modify the *Samuel* case to account for alternative conditions for triggering the electronic key to unlock the case.

131. Next, *Samuel* contemplates **timing** as an aspect of programming a security case. Specifically, *Samuel* discloses that once the signal authorizing opening the case is received, its contents must be removed within a “particular time interval” or the case will lock again. EX-1003, [0137]–[0141]. *Samuel* thus acknowledges timing is a consideration for locking and unlocking signals, and it would be a natural

extension of *Samuel* for a POSA to condition opening of the case on the passage of time as described in *Simpson*. Similarly, *Shin* discloses the use of a “timer means” to block radio waves from entering the envelope until a set time has expired. EX-1004, 9.

132. Each of *Samuel*, *Simpson*, and *Shin* references also discloses ways to secure valuables, and a POSA looking to secure mobile electronic devices as one type of valuables would have been motivated to look to references attempting to solve the same problem.

133. A POSA looking to develop a secure case for mobile electronic devices would also consider variations on the predetermined conditions for unlocking the case, including by review of similar references. *Samuel* discloses the predetermined condition could be that the destination has been reached. EX-1003, [0123]–[0125], [0173]–[0176]. *Simpson*, like *Samuel*, describes the use of GPS location as a condition to determine whether to unlock the case. EX-1005, [0008], [0040], [0043], [0053]. In addition to GPS, *Simpson* teaches that other conditions could be used to initiate an unlock command, such as timing or the identification of an operator with biometric information. EX-1005, [0008], [0053]. Thus, a POSA would have been motivated to consider and combine the disclosures of *Samuel*, *Shin*, and *Simpson*.

C. *Samuel, Shin, and Theobald*

134. Below I apply a combination of *Samuel*, *Shin*, and *Theobald* to my analysis of the invalidity of claim 5 of the '078 patent, which in addition to the requirement in claim 1 that the lock is “further configured to unlock to enable access to the mobile device based on a predetermined condition associated with a geographic region” also requires that the “lock is configured to unlock the case based on interaction with a detacher.”

135. In addition to combining *Samuel* and *Shin* for the reasons described above (e.g., *Samuel* teaching the rigid case depicted in its figures could be replaced by a more flexible envelope design, such as the envelope shown in *Shin*, which results in the Samuel envelope), a POSA also would have been motivated to modify the Samuel envelope with disclosures from *Theobald*, which teaches the use of a zipper that unlocks by application of a magnetic force as an additional layer of security and may be used with a security bag to secure valuables. Like *Shin*, *Theobald* also teaches the more flexible bag or envelope structure (appropriately sized for smaller items like cellphones) that is explicitly referred to in *Samuel*, and *Samuel* thus provides an explicit motivation to combine the flexible structures disclosed in *Shin* and *Theobald* with one or more aspects of the locking/unlocking mechanisms disclosed in *Samuel*. EX-1003, [0021], [0091], EX-1004, Figs. 1–2, EX-1006, Fig. 6, pp. 4, 9.

136. In addition, *Samuel* explicitly discusses using magnetic locking mechanisms, and a POSA would thus have had a motivation to combine *Samuel* with *Theobald*, which also discloses magnetic locking mechanisms and further teaches the use of a detacher to unlock such mechanisms. *See, e.g.*, EX-1003, [0086], [0146]; EX-1006, Fig. 5 (detacher 78), pp. 1, 9.

137. Further, each of *Samuel*, *Shin*, and *Theobald* disclose ways to secure valuables and a POSA looking for ways to secure valuables had motivation to look to references attempting to solve that same problem for ideas on variations that could improve the security features of such a case.

138. For these reasons, it is my opinion that a POSA would have been motivated to combine the disclosures of *Samuel*, *Shin*, and *Theobald* to design a case that met the limitations of claim 5 of the '078 patent.

X. APPLICATION OF PRIOR ART TO CLAIMS 1–5, 9–11, 15–16 AND 19 OF THE '078 PATENT

A. Claim 1 is Invalid in Light of *Samuel* or the Combination of *Samuel* and *Shin*

139. It is my opinion that claim 1 of the '078 patent is invalid as anticipated by *Samuel* or as obvious in light of the combination of *Samuel* and *Shin* as I discuss in greater detail below.

140. I incorporate here my analysis of the motivations to combine *Samuel* and *Shin* from Section IX.A.

1 (preamble) A case comprising:

141. Claim 1 begins with a preamble reciting “[a] case comprising.” Even assuming the preamble was found to be limiting, it is disclosed by *Samuel*.

142. Specifically, *Samuel* discloses “[a] device (2) for the secure transportation of an object (3),” which corresponds to the claimed “case.” EX-1003, Abstract. Indeed, *Samuel* explicitly describes device (2) as a “case”. EX-1003, [0093].

143. *Shin* also discloses a mobile phone storage envelope (depicted in the figures as 1, 101, 201, or 301), which a POSA would understand is a “case.” And as I noted in the motivation to combine section above, which I incorporate here by reference, *Samuel* explicitly discloses that its case could adopt an envelope structure, which is what is disclosed in *Shin*. EX-1003, [0091]. A POSA would thus have had motivation to combine the other features of the *Samuel* case with the mobile phone storage envelope of *Shin*, which I may refer to as the “*Samuel* envelope.”

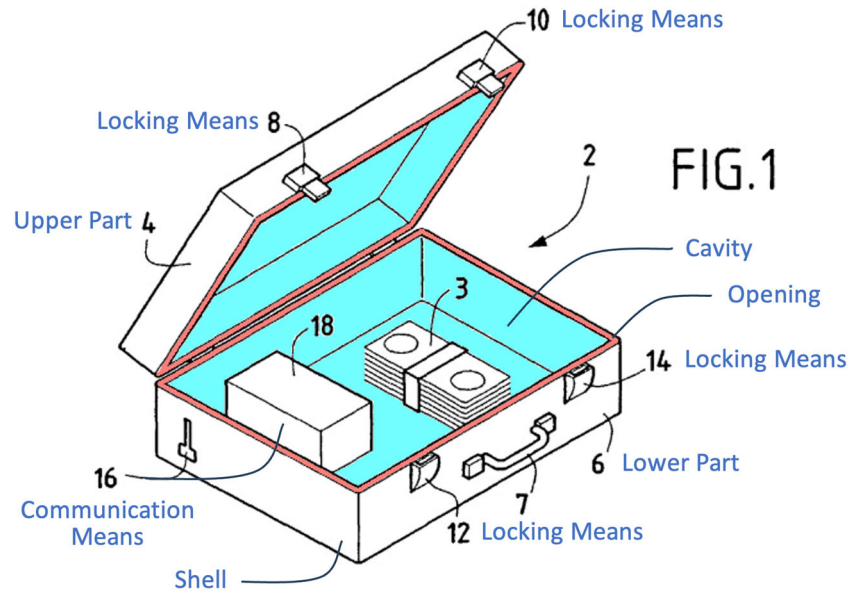
1(a) a shell defining a cavity sized to accommodate a mobile device, the shell having an opening to receive the mobile device; and

144. *Samuel* and *Shin* also teach the limitations of claim element 1(a). For example, *Samuel*’s Figure 1 depicts a lower part (6) of the case (2) having a cavity in which cash (3) is the object being securely transported, which is the “shell defining a cavity.” EX-1003, Fig. 1, [0083]–[0084].

145. *Samuel* teaches that its disclosures are applicable to any size container such that any object may be secured in an appropriately sized case. EX-1003, [0021]; *see also* EX-1003, Fig. 1 (showing a case transporting cash), [0001]–[0002] (noting cash, checks, and other “valuable merchandise” could be transported in its case, [0083]–[0084] (referring to Figure 1 and noting the case “can be used to transport cash 3 or any other merchandise which must be transported confidentially or whose transportation necessitates certain precautions”), [0182] (describing cash, documents, or objects to be transported in a *Samuel* case).

146. Thus, a POSA would have understood that the “object (3)” referred to in *Samuel* could be any number of valuable items, including a mobile device such as a laptop computer or cellular telephone. In addition, *Samuel* teaches that the object (3) could be cash, and a POSA would understand that cash and mobile devices, such as cellphones, are similar in size. Therefore, the cavity shown in *Samuel’s* case is “sized to accommodate a mobile device.”

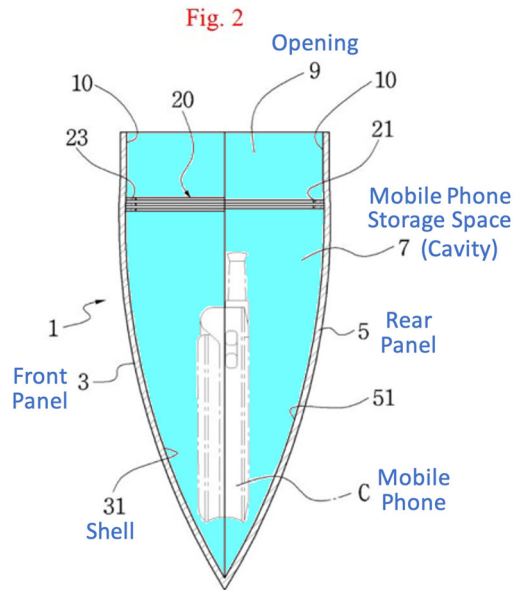
147. The opening of *Samuel’s* case is outlined in red, and the cavity is highlighted in light blue in the following diagram:



148. Furthermore, the *Samuel* case can be opened in order to insert the object being transported. EX-1003, Fig. 1. Therefore, the shell in the *Samuel* case has “an opening to receive the mobile device.”

149. *Shin* is similarly instructive. As explained above, *Shin* explicitly teaches that a mobile phone (which is a mobile device) can be the valuable object contained within a shell. EX-1004, Figs. 1–2, 6, 8, and 11–14.

150. *Shin* also depicts and discusses opening portion (9), which receives the mobile phone C into the envelope, as highlighted in light blue in the figure below. EX-1004, Figs. 2, 5, 7, 9 and 6–8 (discussing opening portion 9).



151. That is, *Shin*, like *Samuel*, discloses “a shell defining a cavity sized to accommodate a mobile device, the shell having an opening to receive the mobile device.”

1(b) a lock positioned proximate to the opening of the shell, the lock configured to render the mobile device at least partially inaccessible upon the lock being locked with the mobile device within the cavity of the shell,

152. *Samuel* and *Shin* teach claim element 1(b) of the '078 patent.

153. *Samuel* depicts a “locking means” in its Figure 1 at 8, 10, 12, and 14 that are “positioned proximate to the opening of the shell.” EX-1003, Fig. 1. *Samuel*’s locking means includes opposing plates with securably mateable female members (as shown in 12, 14) and male members (as shown in 8, 10). EX-1003, Fig. 1, [0083].

154. Once locked, the *Samuel* locking means renders the object being stored

inside the case inaccessible to the user until a certain condition has been met thus disclosing that “the lock [is] configured to render the mobile device at least partially inaccessible upon the lock being locked with the mobile device within the cavity of the shell.” For example, *Samuel* discloses that means (18) inside the case is able to monitor the state of the case (such as its location) and receive and act on closing or opening instructions received by electronic signals. EX-1003, [0088]–[0090], [0105]–[0109], [0124]–[0125], [0174]–[0178], cl. 1.

155. *Shin* also teaches use of the lock required by claim element 1(b). Specifically, *Shin* describes a closing member (20/120/220) that may include a male profile strip (21/121/221) and a female profile strip (23/123/223) positioned near the opening 9 that engage with each other to lock opening 9 such that the user cannot access the mobile phone C. EX-1004, Figs. 2, 5–7, 9–10, and pp. 7–8.

156. In addition, *Shin* teaches that the male and female strips (*i.e.*, opposing plates with securably mateable female and male members) that make up the closing member may be a zipper that locks the envelope. EX-1004, 8. Thus, to a POSA, *Shin* discloses a closing member that is “a lock positioned proximate to the opening of the shell, the lock configured to render the mobile device at least partially inaccessible upon the lock being locked with the mobile device within the cavity of the shell,” particularly in view of the ’078 patent’s disclosure that locking means

could include “magnetic plates, selectively releasable mesh, [or] lockable zippers.” EX-1001, 6:26–29.

157. A POSA also would have found using the *Shin* envelope with the enhanced security of the locking means described in *Samuel* to be a natural modification of the locking means described in *Shin*.

158. Like *Samuel*, *Shin* teaches that the locking means is non-disengageable by the user in light of its objective to block cellphone signals for a pre-set period of time through a “timer means” (80) to prevent use in public places. Indeed, *Shin*’s objective to block cellphone signals further suggests combining *Shin*’s envelope structure with *Samuel*’s locking means to further limit the user’s access to the cellphone stored in the *Shin* envelope during a pre-set period of time or in a specific geographic location (*e.g.*, in a concert hall or church). EX-1004, 5, 9.

159. Finally, *Samuel* teaches the locking means is not disengageable by the user of the mobile device until some predetermined condition is met and therefore the mobile device in a locked *Samuel* case or *Samuel* envelope would be “at least partially inaccessible upon the lock being locked with the mobile device within the cavity of the shell.” *See* EX-1003, Fig. 2 (the *Samuel* case in a locked state). Specifically, *Samuel* discloses that a condition for deliverance of the signal to open its locking means may be whether the case has met a predetermined condition such as arriving at a predetermined location. EX-1003, [0038], [0069], [0073], [0125].

1(c) the lock further configured to unlock to enable access to the mobile device based on a predetermined condition associated with a geographic region.

160. *Samuel* (including in combination with *Shin* as described above regarding the “mobile device”) discloses claim element 1(c).

161. As discussed above, the *Samuel* locking means cannot be unlocked until a predetermined condition is met such as arriving at a predetermined location. EX-1003, [0038], [0069], [0073], [0125]. *Samuel* specifically addresses the secure transportation of an object and uses a predetermined location such as the case’s arrival at a destination address—a “predetermined condition associated with a geographic region”¹—as a condition for sending a signal to unlock the case. *See, e.g.*, EX-1003, [0038], [0058], [0123]–[0125]. Therefore, *Samuel* anticipates the requirement in claim element 1(c) that “the lock [is] further configured to unlock to enable access to the mobile device based on a predetermined condition associated with a geographic region.”

162. Likewise, *Shin* addresses the need to prevent access to phones (i.e., “mobile devices”) in certain venues requiring silence (e.g., “concert halls, churches,

¹ Although it is my opinion that the “associated with” language here is indefinite because a POSA would not know with reasonable certainty the scope of the claim, for purposes of my prior art analysis, I have assumed that if the predetermined condition actually “is” a geographic region, for example, a destination address, that it would also be at least “associated with” a geographic region.

courtrooms, lecture rooms, and libraries”). Limiting access by venue is a form of setting a geographic predetermined condition for cellphone access as required by claim element 1(c). Moreover, *Shin*’s explicit description of preventing cellphone access in certain locations provides another motivation to combine the disclosures of *Samuel* and *Shin* to arrive at the invention in claim 1 of the ’078 patent EX-1004, at 5.

B. Claim 2 is Invalid in Light of the Combination of *Samuel*, *Shin*, and *Simpson*

163. It is my opinion that claim 2 of the ’078 patent is invalid as obvious in light of the combinations of *Samuel*, *Shin*, and *Simpson* as I discuss in greater detail below.

164. I further incorporate here my analysis of the motivations to combine *Samuel*, *Shin*, and *Simpson* from Section IX.B and my analysis of the disclosures of *Samuel* and *Shin* as applied to claim 1 from Section X.A. As indicated therein, it is my opinion that *Samuel* and *Shin* disclose the “case of claim 1.”

165. Likewise, disclosures in *Simpson* are relevant to the requirements of claim 1. *Simpson* is also directed at a “Security Case.” EX-1005, Title, Figs. 1–2. *Simpson* discloses that its invention:

relates to the secure transportation of valuable objects; in particular, it relates to a portable container which restricts access

to the contents within the container to authorized individuals and enables the container to be tracked.

EX-1005, [0002]; *see also* EX-1005, [0009]–[0013] (objects of the invention including the use of restricted entry mechanisms and/or electronic keys). Thus, *Simpson* also teaches a case that restricts access to the “valuable object” being stored within the case in a way that selectively limits the user’s ability to control that object.

166. *Simpson* discloses examples of valuable objects that could be securely transported within its case as “jewelry, financial files, financial documents, credit cards, intelligence files, etc.” EX-1005, [0003]. One embodiment of the *Simpson* case is shown in Figure 2 below, where the opening of *Simpson*’s case is outlined in red, and the cavity (18) highlighted in light blue:

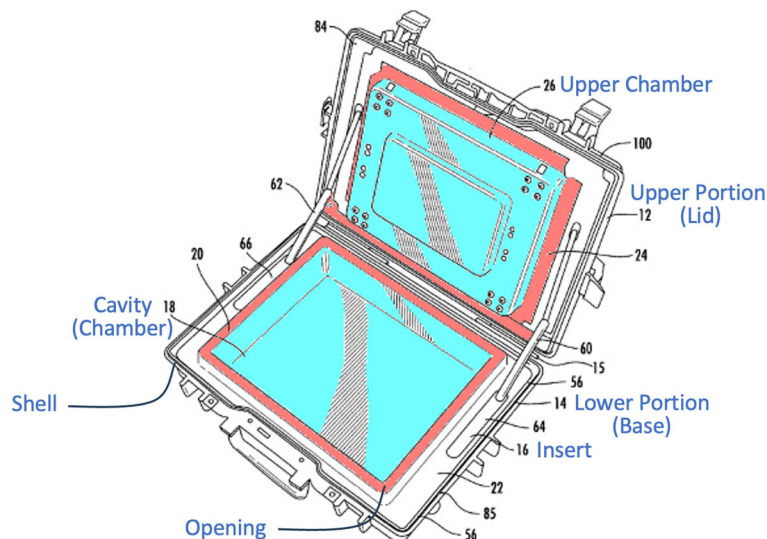


FIG. 2

A POSA would understand from this illustration, as well as the other figures and descriptions in the text, that a mobile electronic device, such as a cellphone or tablet computer, could be a valuable object secured inside the *Simpson* case.

167. *Simpson* is also relevant to claim element 1(a). In summarizing his invention, *Simpson* explains:

The present invention involves the provision of a security case for storing and transporting an item in a secure manner. The case includes a lid coupled to a base and cooperating therewith to define ***a closable storage chamber***. At least one lock device is located inside the case and operable to selectively maintain the lid locked in a closed condition to the base, selectively resisting access to the storage chamber.

EX-1005, [0007] (emphasis added).

168. Additional detail is provided in Figure 2 and its accompanying description in *Simpson*, which discusses that case (10) has a lower portion (14) that includes “insert 16 [that] includes a cavity or lower chamber 18.” EX-1005, Fig. 2, [0036]; *see also* EX-1005, Fig. 6A (showing insert 16 with a cavity to hold one or more valuables). To a POSA, these are descriptions of a “shell defining a cavity.”

169. *Simpson* further teaches that the “valuable articles to be securely transported are housed within the cavity or chamber 18.” EX-1005, [0036]. A POSA would understand that the valuable articles to be transported in a *Simpson* case could include a user’s mobile device.

170. Further, a POSA would understand that the *Simpson* case is “sized to accommodate a mobile device.” First, the valuables discussed in *Simpson* are of a

similar size to mobile devices such as cellphones or tablet computers, and a POSA thus would have considered mobile devices as other examples of valuables that could be stored in the *Simpson* case. EX-1005, [0003] (discussing “jewelry, financial files, financial documents, credit cards, intelligence files”).

171. Second, a POSA would understand that the portable security case as described and illustrated was sized to accommodate a mobile device. EX-1005, Fig. 2; *see also* EX-1005, [0007] (“[t]he case includes a lid coupled to a base and cooperating therewith to define a closeable storage chamber”), [0008] (“self contained, portable security case or container”), [0035] (“portable case or container 10 which is constructed and arranged to securely transport valuable articles”), [0036] (“valuable articles to be securely transported are housed within the cavity or chamber 18”). For example, Figure 2 illustrates what I refer to as a briefcase embodiment, and, as is commonly known, a typical briefcase is sized to accommodate mobile electronic devices such as a tablet computer. EX-1005, Fig. 2.

172. *Simpson* also teaches that its case has “the shell having an opening to receive the mobile device.” Specifically, in the unlocked and open state, there is an opening that allows the mobile electronic device to be placed in the storage chamber, which defines the cavity (18) in the Fig. 2 embodiment. EX-1005, Fig. 2 (perspective view of the interior of the *Simpson* case); *see also* EX-1005, Fig. 6B (cross-sectional

view of a lower portion of the case with insert 16), Fig. 11B (cross-sectional view of the 11A embodiment in an open position), [0017], [0022], [0029].

173. *Simpson* also discloses claim element 1(b). As the Abstract discloses, the *Simpson* case is a “self contained portable security case or container . . . [that is] secure in its locked condition by locks which are preferably operated by an electronic key . . . [that] can be programmed to open the case or container dependent upon various different conditions, for example, location, time, identification of operator, etc.” EX-1005, Abstract. Specifically, in the illustrated embodiment of Figure 2, the *Simpson* case includes shell (16) that is part of the lower portion of the case (14), which is secured to the lid (12) through locks (28). EX-1005, Fig. 2; *see also* EX-1005, Figs. 3, 6A–6C, 7–8 (locks 44), [0002] (“relates to a portable container which restricts access to the contents within the container”), [0036]–[0039] (describing how locking mechanism secures the case closed). *Simpson* describes its locking mechanism and how it can be unlocked using an “electronic key”:

The manner in which the locks 28 secure the lid 12 to the lower portion 14 is illustrated in FIG. 6C. A pin or locking member 36 is an element of each of the four locks 28. The pin 36 moves in a longitudinal direction between an extended or locked position, as illustrated in FIGS. 2 and 6C, and a retracted or open position. In the retracted or open position, the pin 36 does not extend into an aperture in the side of the lower portion 14 of the case. In the locked position, the pin 36 extends into the aperture 38 in the side of the lower portion (FIG. 6C).

Each of the pins 36 is operated by an electrically powered device such as a solenoid 40. The solenoids 40 are preferably operated according to

the schematic of FIG. 8. In place of solenoids 40, stepper motors can also be employed. The stepper motors would preferably drive a worm which is drivingly coupled to a worm gear (not shown), which in turn operates the pins 36. An advantage of such a stepper motor drive system is that the locks 28 cannot be driven backward, thereby preventing access to the interior of said case. An electronic key 42 is utilized to open lock 44 (FIGS. 7 and 8). When lock 44 is open, an electrical circuit is completed. The electrical circuit includes lock 44, a battery 46, a fuse 48, and solenoids 40.

...

The electronic key 42 can be programmed to only open specific locks 44. The electronic key 42 includes a plurality of contacts 43 which electrically connect with respective contacts (not shown) on the lock 44. Preferably, an electronic key locks the case 10 at a point of departure and a separate electronic key at the final destination opens the case 10. The electronic keys can also be programmed to only open the case at a certain time or within a certain time frame or window as preprogrammed. Another feature of the electronic key is that it can be disabled or enabled from a signal transmitted by a satellite, a cell phone, or a radio frequency transmission.

EX-1005, [0037]–[0039].

174. As shown in Figure 6C below, to which I have added annotations and highlights, the *Simpson* locking mechanism includes opposing plates with securably mateable female and male members to secure lid (12) to the lower portion (14) as part of the locking mechanism that includes an aperture (38, highlighted in light blue) in the side of the lower portion (14) through which pin (36, highlighted in green) may be extended to lock the case (10). EX-1008, Fig. 6C, [0037].

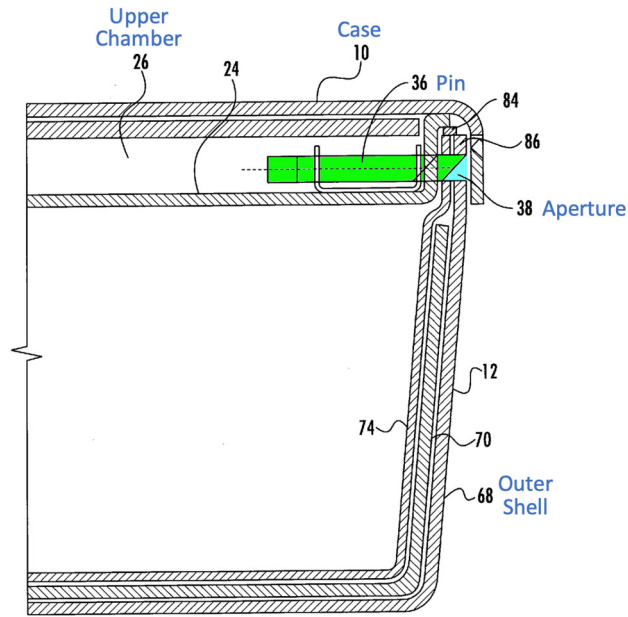


FIG. 6C

175. Further, in the locked position, the contents inside the case are inaccessible to the user, and *Simpson* further teaches that the locking means cannot be disengaged until the electronic key (42) is used to open the lock. EX-1005, [0037]–[0039]. Furthermore, *Simpson* teaches that the ability to unlock with the electronic key may be conditioned on time or geography and the user cannot disengage the *Simpson* locking mechanism until that “predetermined condition” is met (e.g., “within a certain time range” or “at a specific predetermined location”). EX-1005, [0039]–[0040], [0045].

176. Considering these disclosures, a POSA would understand that the *Simpson* locking mechanism is therefore “positioned proximate to the opening of the shell” and “configured to render the mobile device at least partially inaccessible

upon the lock being locked with the mobile device within the cavity of the shell” so that the valuable stored inside (including a user’s mobile device per my discussion above) is inaccessible to the user.

2. The case of claim 1, wherein the predetermined condition is further associated with a time period.

177. *Simpson* also discloses the additional limitation of claim 2 of the ’078 patent. Specifically, as I indicated above, the electronic key (42) used to unlock case (10) may be programmed to “only open the case at a certain time or within a certain time frame or window as preprogrammed.” EX-1005, [0039]. In addition, *Simpson* discloses that its “controller 54 can be programmed to recognize authorized opening of the case within a certain time range.” EX-1005, [0045]. A POSA would understand these disclosures to mean that a “predetermined condition” for opening the *Simpson* case is “further associated with a time period.”

C. Claim 3 is Invalid in Light of *Samuel* or the Combination of *Samuel* and *Shin*

178. It is my opinion that claim 3 of the ’078 patent is invalid as anticipated by *Samuel* or as obvious in light of the combination of *Samuel* and *Shin* as I discuss in greater detail below.

179. I incorporate here my analysis of the motivations to combine *Samuel* and *Shin* from Section IX.A and my analysis of the disclosures of *Samuel* and *Shin*

as applied to claim 1 from Section X.A. As indicated therein, it is my opinion that *Samuel* and *Shin* disclose the “case of claim 1.”

3. The case of claim 1, wherein the geographic region corresponds to a physical position of the case respective to a geographic area of a venue.

180. The additional limitation of claim 3 of the '078 patent is disclosed by *Samuel* and rendered obvious by the combination of disclosures from *Samuel* and *Shin*.

181. *Samuel* addresses the secure transportation of an object and uses its predetermined location (i.e., the case's arrival at a destination address) as a condition for sending a signal to unlock the case. *See, e.g.*, EX-1003, [0038], [0058], [0123]–[0125]. A POSA would understand these disclosures in *Samuel* to teach that “the geographic region corresponds to a physical position of the case respective to a geographic area of a venue” because *Samuel* teaches that arrival of the case at the destination address—the “physical position of the case respective to a geographic area of a venue”—triggers the unlock signal. Specifically, a POSA would understand that the geographic region identified by the destination address is the “geographic area of a venue” and determining whether the case has arrived at that destination address is determining the “physical position of the case respective to” that geographic region.

182. Likewise, *Shin* addresses the need to prevent access to phones in certain venues requiring silence (e.g., “concert halls, churches, courtrooms, lecture rooms, and libraries”). Limiting access by venue is a form of setting a geographic predetermined condition for cellphone access as required by claim 3. Moreover, *Shin*’s explicit description of preventing cellphone access in certain locations provides another motivation to combine the disclosures of *Samuel* and *Shin* to arrive at the invention in claim 3 of the ’078 patent EX-1004, at 5.

D. Claim 4 is Invalid in Light of the Combination of *Samuel* and *Shin*

183. It is my opinion that claim 4 is invalid as obvious in light of the combination of disclosures in *Samuel* and *Shin*.

184. I incorporate here my analysis of the motivations to combine *Samuel* and *Shin* from Section IX.A and my analysis of the disclosures of *Samuel* and *Shin* as applied to claim 1 from Section X.A. As indicated therein, it is my opinion that *Samuel* and *Shin* disclose the “case of claim 1.”

4(a) The case of claim 1, wherein the shell comprises: a front panel; and

185. Claim element 4(a) is disclosed by the combination of *Samuel* and *Shin*.

186. As discussed above, *Samuel* expressly suggests that its case could be implemented with an envelope structure. A POSA would find the elements of claim element 4(a) met by an envelope structure. However, I acknowledge that *Samuel* does not detail the features of the contemplated envelope structure.

187. However, *Shin* does provide detail regarding its envelope structure. *Shin* discloses “an envelope formed by integrally joining left and right edges and bottom edge of a first side and a second side.” EX-1004, Abstract, cl. 1 (“left and right edges and bottom edges of first and second sides are integrally combined to form the envelope”), 6 (“wherein the first side 3 and the second side 5 are joined at their left edge 12, bottom edge 14, and right edge 16 to form a mobile phone storage space 7”). The “first side 3” and “second side 5” in *Shin* are “a front panel” and “a rear panel” as required by claim elements 4(a) and 4(b). *See* EX-1004, Figs. 2, 5, 7, 9, 10 (showing the profile view of various *Shin* envelope embodiments).

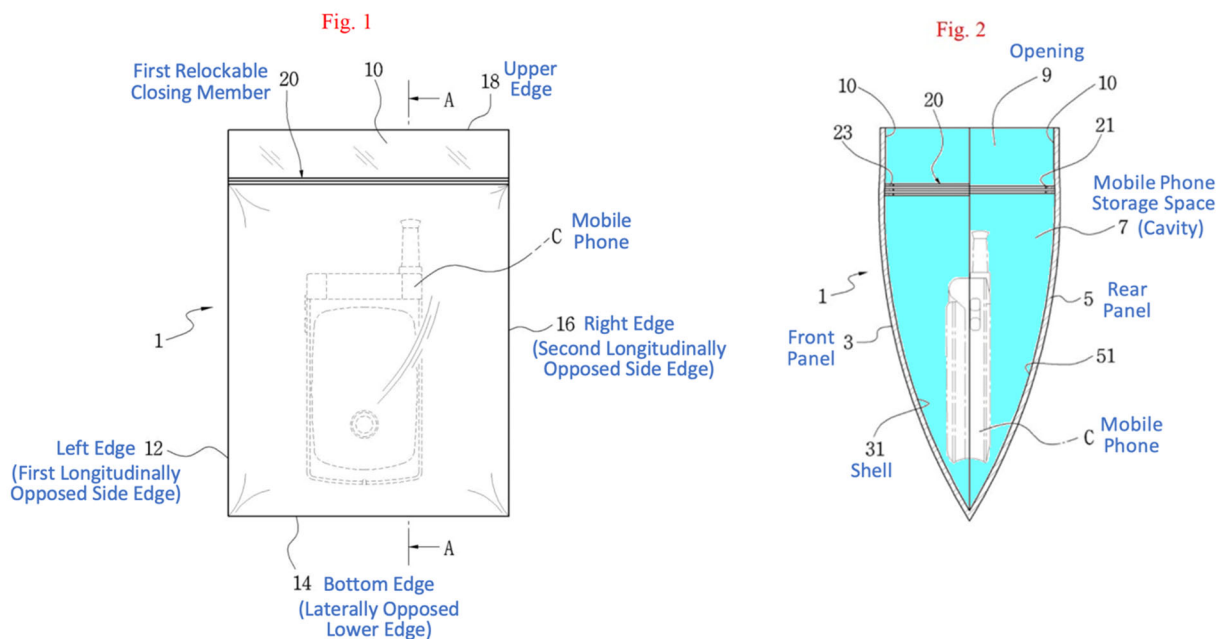
4(b) a rear panel, the rear panel being connected to the front panel on each longitudinal edge and on a lateral edge distally opposed to the opening.

188. Claim element 4(b) is disclosed by the combination of *Samuel* and *Shin*.

189. As discussed above, *Samuel* expressly suggests that its case could be implemented with an envelope structure. A POSA would find the elements of claim element 4(b) met by an envelope structure. However, I acknowledge that *Samuel* does not detail the features of the contemplated envelope structure.

190. *Shin* does provide detail regarding its envelope structure. *Shin* discloses “an envelope formed by integrally joining left and right edges and bottom edge of a first side and a second side.” EX-1004, Abstract, cl. 1 (“left and right edges and bottom edges of first and second sides are integrally combined to form the

envelope”), 6 (“wherein the first side 3 and the second side 5 are joined at their left edge 12, bottom edge 14, and right edge 16 to form a mobile phone storage space 7”). The “first side 3” and “second side 5” in *Shin* are “a front panel” and “a rear panel” as required by claim elements 4(a) and 4(b). See EX-1004, Figs. 2, 5, 7, 9, 10 (showing the profile view of various *Shin* envelope embodiments). Each of the first side (3) and second side (5) has a left edge 12 and right edge 16, which are each a “longitudinal edge” and bottom edge (14) of each side, which is the “lateral edge distally opposed to the opening” required by 4(b). See, e.g., EX-1004, Figs. 1, 3a, 4, 6.



191. Above I have annotated *Shin*’s Figure 1 (which is a view of the front panel) and Figure 2 (which is a side view showing front and rear panels) to show how the *Shin* envelope structure meets the requirements of claim element 4(b). I note

that each panel in the *Shin* structure has a laterally opposed lower edge but because Figure 1 is viewing the front panel only, I have only annotated the laterally opposed lower edge for the front panel. *See also* EX-1004, claim 1 (specifying that there are “bottom edges” that are “integrally combined” with the left and right edges of the first and second sides to form the envelope).

192. As *Shin*’s figures show and its disclosures reinforce, a POSA would understand that the envelope structure is created by “the rear panel being connected to the front panel on each longitudinal edge and on a lateral edge distally opposed to the opening.” EX-1004, Figs. 1–2, 5, 7, 9, 10, Abstract, cl. 1, p. 6.)

E. Claim 5 is Invalid in Light of the Combination of *Samuel*, *Shin*, and *Theobald*

193. It is my opinion that claim 5 of the ’078 patent is invalid as obvious in light of the combination of *Samuel*, *Shin*, and *Theobald* as I discuss in greater detail below.

194. I incorporate here my analysis of motivations to combine *Samuel*, *Shin*, and *Theobald* from Section IX.C and my analysis of the disclosures of *Samuel* and *Shin* as applied to claim 1 from Section X.A. As indicated therein, it is my opinion that *Samuel* and *Shin* disclose the “case of claim 1.”

195. *Theobald* also teaches disclosures that read on elements required by claim 1. For example, *Theobald* discloses a “case” that has “a shell defining a cavity

sized to accommodate a mobile device, the shell having an opening to receive the mobile device” as required by the preamble and claim element 1(a). EX-1006, Fig. 6, p. 9. A POSA would understand from figures and description in *Theobald* of a “product” being put into a security bag that the bag was sized to accommodate a product such as a mobile device and had an opening to receive the mobile device.

196. *Theobald* also discloses the requirements of claim element 1(b). Specifically, *Theobald* discloses a lockable zipper at the top of the security bag (“positioned proximate to the opening of the shell”) that is configured to remain in a locked position and prevent the product from being removed (“the lock configured to render the mobile device at least partially inaccessible upon the lock being locked with the mobile device within the cavity of the shell”). EX-1006, Fig. 6, 3–4, 6, 7, 9.

5. The case of claim 1, wherein the lock is configured to unlock the case based on interaction with a detach.

197. The additional limitation of claim 5 of the '078 patent is disclosed by *Theobald*. Claim 5 of the '078 patent adds to the requirement in claim 1 that the lock is “further configured to unlock to enable access to the mobile device based on a predetermined condition associated with a geographic region” to also require that the “lock is configured to unlock the case based on interaction with a detach.”

198. *Theobald* discloses a zipper lock with a control member 58 that can be moved from a locking position to an unlocking position by the application of a magnetic force to the control member 58, such as through the use of detaching magnet 78 (“a detacher”). EX-1006, Fig. 5, Abstract, pp. 2, 8–9. A POSA would understand that the lock in *Theobald* was thus “configured to unlock the case based on interaction with a detacher.”

F. Claim 9 is Invalid in Light of *Samuel* or the Combination of *Samuel* and *Shin*

199. It is my opinion that claim 9 of the '078 patent is invalid as anticipated by *Samuel* or as obvious in light of the combination of *Samuel* and *Shin* as I discuss in greater detail below.

9 (preamble) A case comprising:

200. Claim 9 begins with a preamble reciting “[a] case comprising.” Even assuming the preamble was found to be limiting, it is disclosed by *Samuel*.

201. Specifically, *Samuel* discloses “[a] device (2) for the secure transportation of an object (3),” which corresponds to the claimed “case.” EX-1003, Abstract. Indeed, *Samuel* explicitly describes device (2) as a “case”. EX-1003, [0093].

202. *Shin* also discloses a mobile phone storage envelope (depicted in the figures as 1, 101, 201, or 301), which a POSA would understand is a “case.” And as

I noted in the motivation to combine section above, which I incorporate here by reference, *Samuel* explicitly discloses that its case could adopt an envelope structure, which is what is disclosed in *Shin*. EX-1003, [0091]. A POSA would thus have had motivation to combine the other features of the *Samuel* case with the mobile phone storage envelope of *Shin* to form the “*Samuel* envelope.”

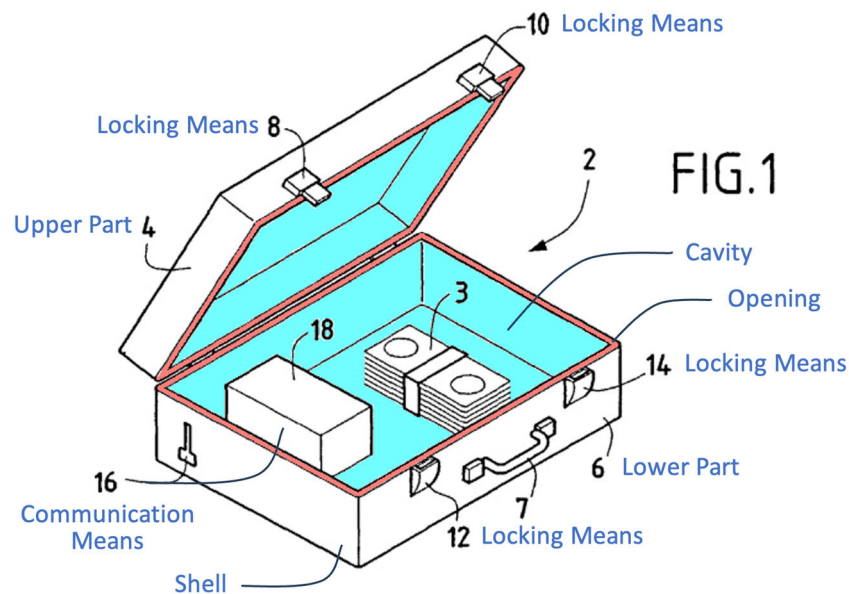
9(a) a shell defining a cavity sized to accommodate a mobile device, the shell having an opening to receive the mobile device; and

203. *Samuel* and *Shin* also teach the limitations of claim element 9(a). For example, *Samuel*’s Figure 1 depicts a lower part (6) of the case (2) having a cavity in which cash (3) is the object being securely transported, which is the “shell defining a cavity.” EX-1003, Fig. 1, [0083]–[0084].

204. *Samuel* teaches that its disclosures are applicable to any size container such that any object may be secured in an appropriately sized case. EX-1003, [0021]; *see also* EX-1003, Fig. 1 (showing a case transporting cash), [0001]–[0002] (noting cash, checks, and other “valuable merchandise” could be transported in its case, [0083]–[0084] (referring to Figure 1 and noting the case “can be used to transport cash 3 or any other merchandise which must be transported confidentially or whose transportation necessitates certain precautions”), [0182] (describing cash, documents, or objects to be transported in a *Samuel* case).

205. Thus, a POSA would have understood that the “object (3)” referred to in *Samuel* could be any number of valuable items, including a mobile device such as a laptop computer or cellular telephone. In addition, *Samuel* teaches that the object (3) could be cash, and a POSA would understand that cash and mobile devices, such as cellphones, are similar in size. Therefore, the cavity shown in *Samuel*’s case is “sized to accommodate a mobile device.”

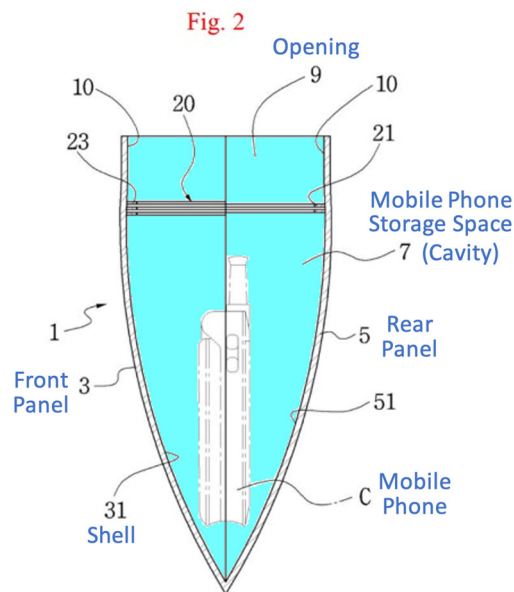
206. The opening of *Samuel*’s case is outlined in red, and the cavity is highlighted in light blue in the following diagram:



207. Furthermore, the *Samuel* case can be opened in order to insert the object being transported. EX-1003, Fig. 1. Therefore, the shell in the *Samuel* case has “an opening to receive the mobile device.”

208. *Shin* is similarly instructive. As explained above, *Shin* explicitly teaches that a mobile phone (which is a mobile device) can be the valuable object contained within a shell. EX-1004, Figs. 1–2, 6, 8, and 11–14.

209. *Shin* also depicts and discusses opening portion (9), which receives the mobile phone C into the envelope, as highlighted in light blue in the figure below. EX-1004, Figs. 2, 5, 7, 9 and 6–8 (discussing opening portion 9).



210. That is, *Shin*, like *Samuel*, discloses “a shell defining a cavity sized to accommodate a mobile device, the shell having an opening to receive the mobile device.”

9(b) a lock positioned proximate to the opening of the shell, the lock configured to at least partially secure the opening of the shell, the lock being further configured to lock the shell and render the mobile device at least partially inaccessible,

211. *Samuel* and *Shin* teach claim element 9(b) of the '078 patent.

212. *Samuel* depicts a “locking means” in its Figure 1 at 8, 10, 12, and 14 that is a “lock” that is “positioned proximate to the opening of the shell.” EX-1003, Fig. 1. *Samuel*’s locking means includes opposing plates with securably mateable female members (as shown in 12, 14) and male members (as shown in 8, 10). EX-1003, Fig. 1, [0083].

213. Once locked, the *Samuel* locking means renders the object being stored inside the case inaccessible to the user until a certain condition has been met thus disclosing that “the lock [is] configured to at least partially secure the opening of the shell, the lock being further configured to lock the shell and render the mobile device at least partially inaccessible.” For example, *Samuel* discloses that means (18) inside the case is able to monitor the state of the case (such as its location) and receive and act on closing or opening instructions received by electronic signals. EX-1003, [0088]–[0090], [0105]–[0109], [0124]–[0125], [0174]–[0178], cl. 1.

214. *Shin* also teaches use of the lock required by claim element 9(b). Specifically, *Shin* describes a closing member (20/120/220) that may include a male profile strip (21/121/221) and a female profile strip (23/123/223) positioned near the opening 9 that engage with each other to lock opening 9 such that the user cannot access the mobile phone C. EX-1004, Figs. 2, 5–7, 9–10, and pp. 7–8.

215. In addition, *Shin* teaches that the male and female strips (*i.e.*, opposing plates with securably mateable female and male members) that make up the closing

member may be a zipper that locks the envelope. EX-1004, 8. Thus, to a POSA, *Shin* discloses a closing member that is “a lock positioned proximate to the opening of the shell, the lock configured to render the mobile device at least partially inaccessible upon the lock being locked with the mobile device within the cavity of the shell,” particularly in view of the ’078 patent’s disclosure that locking means could include “magnetic plates, selectively releasable mesh, [or] lockable zippers.” EX-1001, 6:26–29.

216. A POSA also would have found using the *Shin* envelope with the enhanced security of the locking means described in *Samuel* to be a natural modification of the locking means described in *Shin*.

217. Like *Samuel*, *Shin* teaches that the locking means is non-disengageable by the user in light of its objective to block cellphone signals for a pre-set period of time through a “timer means” (80) to prevent use in public places. Indeed, *Shin*’s objective to block cellphone signals further suggests combining *Shin*’s envelope structure with *Samuel*’s locking means to further limit the user’s access to the cellphone stored in the *Shin* envelope during a pre-set period of time or in a specific geographic location (*e.g.*, in a concert hall or church). EX-1004, 5, 9.

218. Finally, *Samuel* teaches the locking means is not disengageable by the user of the mobile device until some predetermined condition is met—the “lock being further configured to lock the shell”—and that the mobile device in a locked

Samuel case or *Samuel* envelope would be “at least partially inaccessible” upon the lock being locked with the mobile device inside the case. Compare EX-1003, Fig. 1 (*Samuel* case in an open state) with Fig. 2 (the *Samuel* case in a locked state); see also EX-1003, [0038], [0083], [0086], [0090], [0105]–[0106]. Specifically, *Samuel* discloses “the object 3 to be transported is placed in the transportation device 2 and the device is closed. The means 8, 10, 12, 14 are locked so that the device 2 cannot be opened without forcing it unless opening is commanded by the monitoring system 22.” EX-1003, [0105], claim 1.

219. *Samuel* further teaches that a condition for deliverance of the signal to open its locking means may be whether the case has met a predetermined condition such as arriving at a predetermined location. EX-1003, [0038], [0069], [0073], [0125]. A POSA would thus understand that upon locking the *Samuel* case or *Samuel* envelope, the opening of the shell would be “at least partially secure” and the mobile device inside would be inaccessible until the condition is satisfied, which triggers the signal to unlock the case.

9(c) wherein the lock is further configured to unlock to enable access to the mobile device in accordance with a predetermined condition associated with a geographic region.

220. *Samuel* (including in combination with *Shin* as described above regarding the “mobile device”) discloses claim element 9(c).

221. As discussed above, the *Samuel* locking means cannot be unlocked until a predetermined condition is met such as arriving at a predetermined location. EX-1003, [0038], [0069], [0073], [0125]. *Samuel* specifically addresses the secure transportation of an object and uses a predetermined location such as the case's arrival at a destination address—a “predetermined condition associated with a geographic region”²—as a condition for sending a signal to unlock the case. *See, e.g.*, EX-1003, [0038], [0058], [0123]–[0125]. Therefore, *Samuel* anticipates the requirement in claim element 9(c) that “the lock [is] further configured to unlock to enable access to the mobile device based on a predetermined condition associated with a geographic region.”

222. Likewise, *Shin* addresses the need to prevent access to phones (i.e., “mobile devices”) in certain venues requiring silence (e.g., “concert halls, churches, courtrooms, lecture rooms, and libraries”). Limiting access by venue is a form of setting a geographic predetermined condition for cellphone access as required by claim element 9(c). Moreover, *Shin*'s explicit description of preventing cellphone access in certain locations provides another motivation to combine the disclosures

² Although it is my opinion that the “associated with” language here is indefinite because a POSA would not know with reasonable certainty the scope of the claim, for purposes of my prior art analysis, I have assumed that if the predetermined condition actually “is” a geographic region, for example, a destination address, that it would also be at least “associated with” a geographic region.

of *Samuel* and *Shin* to arrive at the invention in claim 9 of the '078 patent EX-1004, at 5.

G. Claim 10 is Invalid in Light of the Combination of *Samuel*, *Shin*, and *Simpson*

223. It is my opinion that claim 10 of the '078 patent is invalid as obvious in light of the combination of *Samuel*, *Shin*, and *Simpson* as I discuss in greater detail below.

224. I further incorporate here my analysis of the motivations to combine *Samuel*, *Shin*, and *Simpson* from Section IX.B and my analysis of the disclosures of *Samuel* and *Shin* as applied to claim 9 from Section X.F. As indicated therein, it is my opinion that *Samuel* and *Shin* disclose the “case of claim 9.”

225. Likewise, disclosures in *Simpson* are relevant to the requirements of claim 9. *Simpson* is also directed at a “Security Case.” EX-1005, Title, Figs. 1–2. *Simpson* discloses that its invention:

relates to the secure transportation of valuable objects; in particular, it relates to a portable container which restricts access to the contents within the container to authorized individuals and enables the container to be tracked.

EX-1005, [0002]; *see also* EX-1005, [0009]–[0013] (objects of the invention including the use of restricted entry mechanisms and/or electronic keys). Thus,

Simpson also teaches a case that restricts access to the “valuable object” being stored within the case in a way that selectively limits the user’s ability to control that object.

226. *Simpson* discloses examples of valuable objects that could be securely transported within its case as “jewelry, financial files, financial documents, credit cards, intelligence files, etc.” EX-1005, [0003]. One embodiment of the *Simpson* case is shown in Figure 2 below, where the opening of *Simpson*’s case is outlined in red, and the cavity (18) highlighted in light blue:

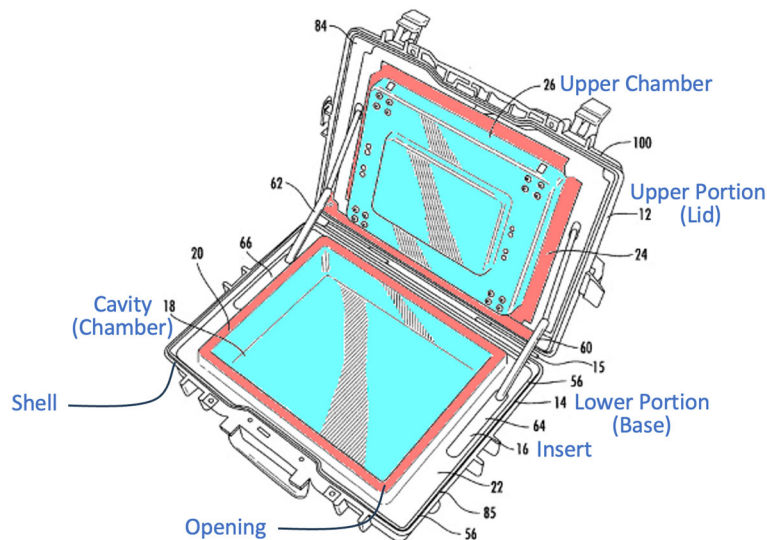


FIG. 2

A POSA would understand from this illustration, as well as the other figures and descriptions in the text, that a mobile device, such as a cellphone or tablet computer, could be a valuable object secured inside the *Simpson* case.

227. *Simpson* is also relevant to claim element 9(a). In summarizing his invention, *Simpson* explains:

The present invention involves the provision of a security case for storing and transporting an item in a secure manner. The case includes a lid coupled to a base and cooperating therewith to define ***a closable storage chamber***. At least one lock device is located inside the case and operable to selectively maintain the lid locked in a closed condition to the base, selectively resisting access to the storage chamber.

EX-1005, [0007] (emphasis added).

228. Additional detail is provided in Figure 2 and its accompanying description in *Simpson*, which discusses that case (10) has a lower portion (14) that includes “insert 16 [that] includes a cavity or lower chamber 18.” EX-1005, Fig. 2, [0036]; *see also* EX-1005, Fig. 6A (showing insert 16 with a cavity to hold one or more valuables). To a POSA, these are descriptions of a “shell defining a cavity.”

229. *Simpson* further teaches that the “valuable articles to be securely transported are housed within the cavity or chamber 18.” EX-1005, [0036]. A POSA would understand that the valuable articles to be transported in a *Simpson* case could include a user’s mobile device.

230. Further, a POSA would understand that the *Simpson* case is “sized to accommodate a mobile device.” First, the valuables discussed in *Simpson* are of a similar size to mobile devices such as cellphones or tablet computers, and a POSA thus would have considered mobile devices as other examples of valuables that could be stored in the *Simpson* case. EX-1005, [0003] (discussing “jewelry, financial files, financial documents, credit cards, intelligence files”).

231. Second, a POSA would understand that the portable security case as described and illustrated was sized to accommodate a mobile device. EX-1005, Fig. 2; *see also* EX-1005, [0007] (“[t]he case includes a lid coupled to a base and cooperating therewith to define a closeable storage chamber”), [0008] (“self contained, portable security case or container”), [0035] (“portable case or container 10 which is constructed and arranged to securely transport valuable articles”), [0036] (“valuable articles to be securely transported are housed within the cavity or chamber 18”). For example, Figure 2 illustrates what I refer to as a briefcase embodiment, and, as is commonly known, a typical briefcase is sized to accommodate mobile electronic devices such as a tablet computer. EX-1005, Fig. 2.

232. *Simpson* also teaches that its case has “the shell having an opening to receive the mobile device.” Specifically, in the unlocked and open state, there is an opening that allows the mobile device to be placed in the storage chamber, which defines the cavity (18) in the Fig. 2 embodiment. EX-1005, Fig. 2 (perspective view of the interior of the *Simpson* case); *see also* EX-1005, Fig. 6B (cross-sectional view of a lower portion of the case with insert 16), Fig. 11B (cross-sectional view of the 11A embodiment in an open position), [0017], [0022], [0029].

233. *Simpson* also discloses claim element 9(b). As the Abstract discloses, the *Simpson* case is a “self contained portable security case or container . . . [that is] secure in its locked condition by locks which are preferably operated by an electronic

key . . . [that] can be programmed to open the case or container dependent upon various different conditions, for example, location, time, identification of operator, etc.” EX-1005, Abstract. Specifically, in the illustrated embodiment of Figure 2, the *Simpson* case includes shell (16) that is part of the lower portion of the case (14), which is secured to the lid (12) through locks (28). EX-1005, Fig. 2; *see also* EX-1005, Figs. 3, 6A–6C, 7–8 (locks 44), [0002] (“relates to a portable container which restricts access to the contents within the container”), [0036]–[0039] (describing how locking mechanism secures the case closed). *Simpson* describes its locking mechanism and how it can be unlocked using an “electronic key”:

The manner in which the locks 28 secure the lid 12 to the lower portion 14 is illustrated in FIG. 6C. A pin or locking member 36 is an element of each of the four locks 28. The pin 36 moves in a longitudinal direction between an extended or locked position, as illustrated in FIGS. 2 and 6C, and a retracted or open position. In the retracted or open position, the pin 36 does not extend into an aperture in the side of the lower portion 14 of the case. In the locked position, the pin 36 extends into the aperture 38 in the side of the lower portion (FIG. 6C).

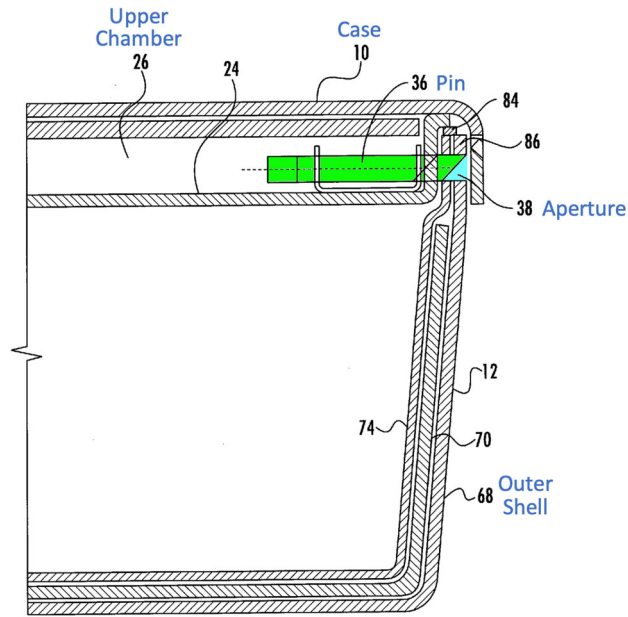
Each of the pins 36 is operated by an electrically powered device such as a solenoid 40. The solenoids 40 are preferably operated according to the schematic of FIG. 8. In place of solenoids 40, stepper motors can also be employed. The stepper motors would preferably drive a worm which is drivingly coupled to a worm gear (not shown), which in turn operates the pins 36. An advantage of such a stepper motor drive system is that the locks 28 cannot be driven backward, thereby preventing access to the interior of said case. An electronic key 42 is utilized to open lock 44 (FIGS. 7 and 8). When lock 44 is open, an electrical circuit is completed. The electrical circuit includes lock 44, a battery 46, a fuse 48, and solenoids 40.

. . .

The electronic key 42 can be programmed to only open specific locks 44. The electronic key 42 includes a plurality of contacts 43 which electrically connect with respective contacts (not shown) on the lock 44. Preferably, an electronic key locks the case 10 at a point of departure and a separate electronic key at the final destination opens the case 10. The electronic keys can also be programmed to only open the case at a certain time or within a certain time frame or window as preprogrammed. Another feature of the electronic key is that it can be disabled or enabled from a signal transmitted by a satellite, a cell phone, or a radio frequency transmission.

EX-1005, [0037]–[0039].

234. As shown in Figure 6C below, to which I have added annotations and highlights, the *Simpson* locking mechanism includes opposing plates with securably mateable female and male members to secure lid (12) to the lower portion (14) as part of the locking mechanism that includes an aperture (38, highlighted in light blue) in the side of the lower portion (14) through which pin (36, highlighted in green) may be extended to lock the case (10). EX-1008, Fig. 6C, [0037].



235. Further, in the locked position, the contents inside the case are inaccessible to the user, and *Simpson* further teaches that the locking means cannot be disengaged until the electronic key (42) is used to open the lock. EX-1005, [0037]–[0039]. Furthermore, *Simpson* teaches that the ability to unlock with the electronic key may be conditioned on time or geography and the user cannot disengage the *Simpson* locking mechanism until that “predetermined condition” is met (e.g., “within a certain time range” or “at a specific predetermined location”). EX-1005, [0039]–[0040], [0045].

236. Considering these disclosures, a POSA would understand that the Simpson locking mechanism is therefore “positioned proximate to the opening of the shell” and “configured to at least partially secure the opening of the shell, the

lock being further configured to lock the shell and render the mobile device at least partially inaccessible” so that the valuable stored inside (including a user’s mobile device per my discussion above) is inaccessible to the user.

10. The case of claim 9, wherein the predetermined condition is further associated with a time period, wherein the geographic region corresponds to a physical position of the case respective to a geographic area of a venue.

237. The additional limitations of claim 10 of the ’078 patent are disclosed by the combination of *Samuel*, *Shin*, and *Simpson*.

238. Specifically, as I indicated above, *Simpson* discloses that the electronic key (42) used to unlock case (10) may be programmed to “only open the case at a certain time or within a certain time frame or window as preprogrammed.” EX-1005, [0039]. In addition, *Simpson* discloses that its “controller 54 can be programmed to recognize authorized opening of the case within a certain time range.” EX-1005, [0045]. A POSA would understand these disclosures to mean that a “predetermined condition” for opening the *Simpson* case is “further associated with a time period.”

239. *Samuel* addresses the secure transportation of an object and uses its predetermined location (i.e., the case’s arrival at a destination address) as a condition for sending a signal to unlock the case. *See, e.g.*, EX-1003, [0038], [0058], [0123]–[0125]. A POSA would understand these disclosures in *Samuel* to teach that “the geographic region corresponds to a physical position of the case respective to a

geographic area of a venue” because *Samuel* teaches that arrival of the case at the destination address—the “physical position of the case respective to a geographic area of a venue”—triggers the unlock signal. Specifically, a POSA would understand that the geographic region identified by the destination address is the “geographic area of a venue” and determining whether the case has arrived at that destination address is determining the “physical position of the case respective to” that geographic region.

240. Likewise, *Shin* addresses the need to prevent access to phones in certain venues requiring silence (e.g., “concert halls, churches, courtrooms, lecture rooms, and libraries”). Limiting access by venue is a form of setting a geographic predetermined condition for cellphone access as required by claim 10. Moreover, *Shin*’s explicit description of preventing cellphone access in certain locations provides another motivation to combine the disclosures of *Samuel* and *Shin* to arrive at the invention in claim 10 of the ’078 patent EX-1004, at 5.

H. Claim 11 is Invalid in Light of the Combination of *Samuel* and *Shin*

241. It is my opinion that claim 11 is invalid as obvious in light of the combination of disclosures in *Samuel* and *Shin*.

242. I incorporate here my analysis of the motivations to combine *Samuel* and *Shin* from Section IX.A and my analysis of the disclosures of *Samuel* and *Shin*

as applied to claim 9 from Section X.F. As indicated therein, it is my opinion that *Samuel* and *Shin* disclose the “case of claim 9.”

11(a) The case of claim 9, wherein the shell comprises: a front panel; and

243. Claim element 11(a) is disclosed by the combination of *Samuel* and *Shin*.

244. As discussed above, *Samuel* expressly suggests that its case could be implemented with an envelope structure. A POSA would find the elements of claim element 11(a) met by an envelope structure. However, I acknowledge that *Samuel* does not detail the features of the contemplated envelope structure.

245. However, *Shin* does provide detail regarding its envelope structure. *Shin* discloses “an envelope formed by integrally joining left and right edges and bottom edge of a first side and a second side.” EX-1004, Abstract, cl. 1 (“left and right edges and bottom edges of first and second sides are integrally combined to form the envelope”), 6 (“wherein the first side 3 and the second side 5 are joined at their left edge 12, bottom edge 14, and right edge 16 to form a mobile phone storage space 7”). The “first side 3” and “second side 5” in *Shin* are “a front panel” and “a rear panel” as required by claim elements 11(a) and 11(b). See EX-1004, Figs. 2, 5, 7, 9, 10 (showing the profile view of various *Shin* envelope embodiments).

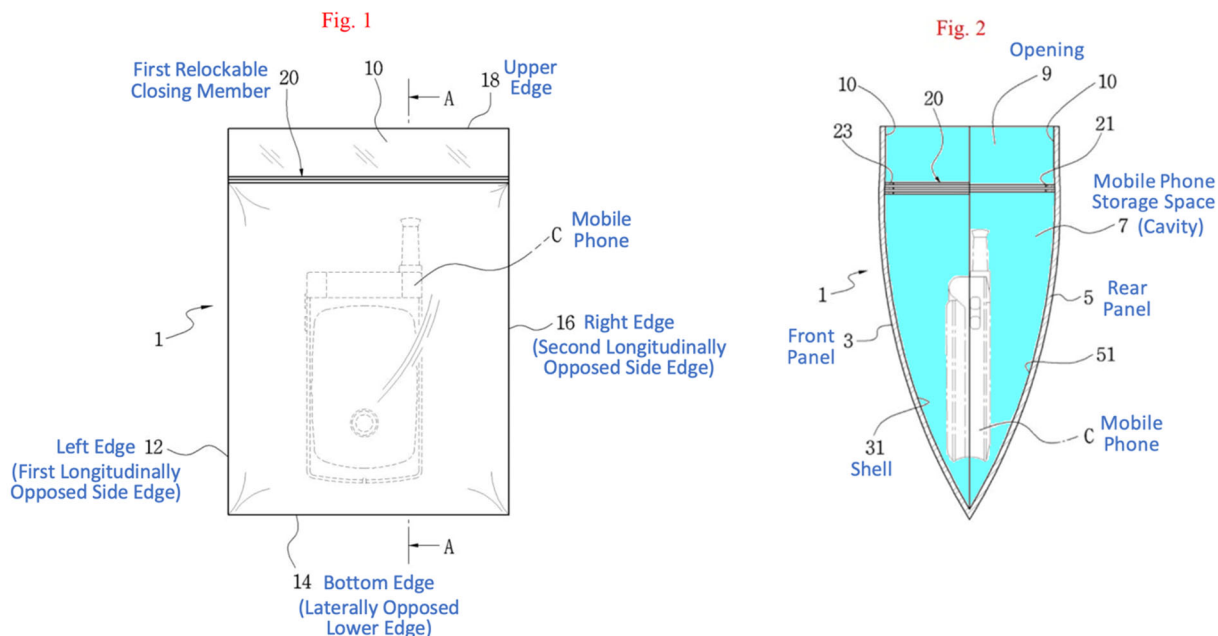
11(b) a rear panel, the rear panel being connected to the front panel on each longitudinal edge and on a lateral edge distally opposed to the opening.

246. Claim element 11(b) is disclosed by the combination of *Samuel* and *Shin*.

247. As discussed above, *Samuel* expressly suggests that its case could be implemented with an envelope structure. A POSA would find the elements of claim element 11(b) met by an envelope structure. However, I acknowledge that *Samuel* does not detail the features of the contemplated envelope structure.

248. *Shin* does provide detail regarding its envelope structure. *Shin* discloses “an envelope formed by integrally joining left and right edges and bottom edge of a first side and a second side.” EX-1004, Abstract, cl. 1 (“left and right edges and bottom edges of first and second sides are integrally combined to form the envelope”), 6 (“wherein the first side 3 and the second side 5 are joined at their left edge 12, bottom edge 14, and right edge 16 to form a mobile phone storage space 7”). The “first side 3” and “second side 5” in *Shin* are “a front panel” and “a rear panel” as required by claim elements 11(a) and 11(b). See EX-1004, Figs. 2, 5, 7, 9, 10 (showing the profile view of various *Shin* envelope embodiments). Each of the first side (3) and second side (5) has a left edge 12 and right edge 16, which are each a “longitudinal edge” and bottom edge (14) of each side, which is the “lateral edge

distally opposed to the opening” required by 11(b). *See, e.g.*, EX-1004, Figs. 1, 3a, 4, 6.



249. Above I have annotated *Shin*’s Figure 1 (which is a view of the front panel) and Figure 2 (which is a side view showing front and rear panels) to show how the *Shin* envelope structure meets the requirements of claim element 4(b). I note that each panel in the *Shin* structure has a laterally opposed lower edge but because Figure 1 is viewing the front panel only, I have only annotated the laterally opposed lower edge for the front panel. *See also* EX-1004, claim 1 (specifying that there are “bottom edges” that are “integrally combined” with the left and right edges of the first and second sides to form the envelope).

250. As *Shin*’s figures show and its disclosures reinforce, a POSA would understand that the envelope structure is created by “the rear panel being connected

to the front panel on each longitudinal edge and on a lateral edge distally opposed to the opening.” EX-1004, Figs. 1–2, 5, 7, 9, 10, Abstract, cl. 1, p. 6.)

I. Claim 15 is Invalid in Light of the Combination of *Samuel* and *Shin*

251. It is my opinion that claim 15 of the ’078 patent is invalid as obvious in light of the combination of *Samuel* and *Shin* as I discuss in greater detail below.

15 (preamble) A system comprising:

252. Claim 15 begins with a preamble reciting “[a] system comprising.” Even assuming the preamble was found to be limiting, it is disclosed by *Samuel* and *Shin*.

253. *Samuel* discloses “[a] device (2) for the secure transportation of an object (3),” which is later referred to as a “case.” EX-1003, Abstract, [0093]. *Samuel* discloses a system that includes the *Samuel* case (2) and monitoring system (22) that renders the contents of the case inaccessible by preventing the case from being unlocked/opened until a predetermined state of the case is met, such as reaching a desired location. EX-1003, [0001]–[0002] [0083]–[0084], [0124]–[0125], [0182] (broadly describing cash, documents or objects to be transported in a *Samuel* case). In this way, the *Samuel* system selectively limits a user’s ability to control any cash, documents or other valuable merchandise being stored in the case. As noted above,

a POSA would have understood that a mobile electronic device, such as a cellphone, could be the “object” stored in the *Samuel* case.

254. Furthermore, as I described above, a POSA would have been motivated by *Samuel*’s express discussion of an alternative “envelope” structure for its case to look to other references that focus on that type of structure, including, for example *Shin*. EX-1003, [0021], [0091]. *Shin* teaches a mobile phone storage envelope. EX-1004, Figs. 1–2, 6, 8, 11–14, Abstract. Thus, a POSA looking to both references to design a secure case and system might choose to combine the envelope structure of *Shin*, which was specifically sized to contain a cellphone, with the locking and unlocking mechanisms discussed in *Samuel* in order to arrive at the claimed “system.” A POSA would not have expected any significant technical obstacles to combining the disclosures in *Shin* and *Samuel* to end up with a case as I described above and in my discussion of claim 15 below.

**15(a) a case sized to receive a user’s mobile electronic device,
the case including:**

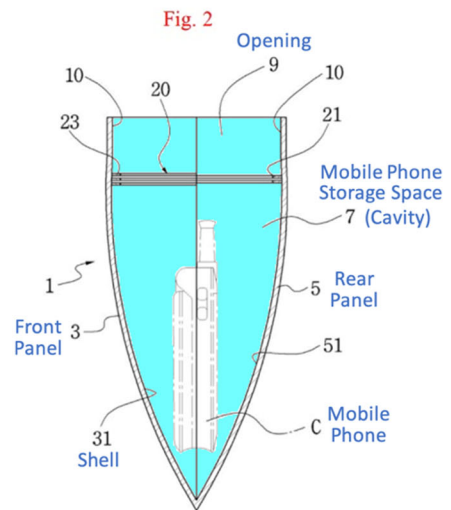
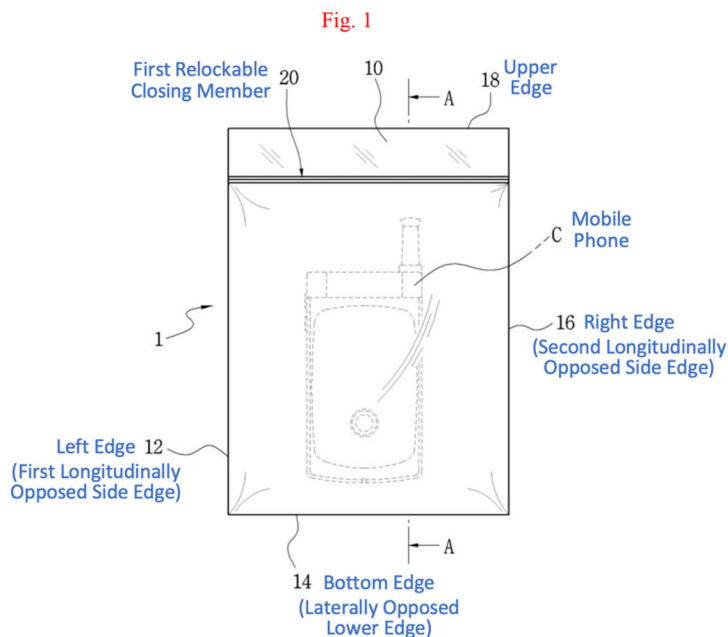
255. Claim element 15(a) is disclosed by the combination of *Samuel* and *Shin*.

256. *Samuel* discloses that its “case” is sized to receive valuable objects, for example, Figure 1 depicts a case in which cash (3) is the object depicted as being stored. EX-1003, Fig. 1, [0083]–[0084]. A POSA would have understood that

Samuel's general references to an "object" being stored could also include a "user's mobile electronic device." And, a POSA would have understood that a cellphone can be approximately the same size as the cash depicted in Figure 1 of *Samuel* and therefore the *Samuel* case was "a case sized to receive a user's mobile electronic device."

257. *Samuel* also discusses the use of flexible materials, such as "flexible plastics or rubber", to make the case, including in an "envelope" structure to transport smaller objects. EX-1003, [0091]–[0092]. The alternative suggested in *Samuel* is found in *Stewart* and *Shin*, which a POSA would have looked to if deciding to design a case according to the disclosures in *Samuel* with the suggested envelope structure. *Shin* explicitly refers to its case structure as "an envelope for storing a mobile phone." EX-1004, Title, 1.

258. *Shin* also describes the envelope structure in detail and depicts its use to store a cellphone in Figures 1 and 2 (to which I have added annotations in blue):



EX-1004, Figs. 1, 2, Abstract, 1 (“having sufficient size to form a mobile phone storage space”), 6 (describing Fig. 1), cl. 1 (“sufficient size to form a mobile phone storage space”); *see also* EX-1006, Figs. 2, 6, 8, 11–14. As shown and described in *Shin*, the mobile phone storage envelope (depicted in the figures as 1, 101, 201, and 301) is a “a case sized to receive a user’s mobile electronic device.”

15(b) a front panel having a first set of longitudinal edges, a first top edge and a first bottom edge, and

259. Claim element 15(b) is also disclosed by the combination of *Samuel* and *Shin*.

260. As discussed above, *Samuel* expressly suggests that its case could be implemented with an envelope structure. A POSA would find the elements of claim

element 15(b) met by an envelope structure. However, I acknowledge that *Samuel* does not detail the features of the contemplated envelope structure.

261. However, *Shin* does provide detail regarding its envelope structure. *Shin* discloses “an envelope formed by integrally joining left and right edges and bottom edge of a first side and a second side.” EX-1004, Abstract, cl. 1 (“left and right edges and bottom edges of first and second sides are integrally combined to form the envelope”), 6 (“wherein the first side 3 and the second side 5 are joined at their left edge 12, bottom edge 14, and right edge 16 to form a mobile phone storage space 7”). The “first side 3” and “second side 5” in *Shin* are “a front and a rear panel” as required by claim elements 15(b) and 15(c). See EX-1004, Figs. 2, 5, 7, 9, 10 (showing the profile view of various *Shin* envelope embodiments). The first side (3) has a left edge 12 and right edge 16, which are “a first set of longitudinal edges,” upper edge 18 is a “first top edge” and bottom edge (14) is the “a first bottom edge” required by 15(b). See, e.g., EX-1004, Figs. 1, 3a, 4, 6.

262. Above I have annotated *Shin*’s Figure 1 (which is a view of the front panel) and Figure 2 (which is a side view showing front and rear panels) to show how the *Shin* envelope structure meets the requirements of claim element 15(b). I note that each panel in the *Shin* structure has a laterally opposed lower edge but because Figure 1 is viewing the front panel only, I have only annotated the laterally opposed lower edge for the front panel. See also EX-1004, claim 1 (specifying that

there are “bottom edges” that are “integrally combined” with the left and right edges of the first and second sides to form the envelope).

15(c) a rear panel having a second set of longitudinal edges, a second top edge and a second bottom edge, wherein the first set of longitudinal edges are respectively secured to the second set of longitudinal edges and the first bottom edge is secured to the second bottom edge to define an opening of the case for receiving a mobile electronic device; and

263. Claim element 15(c) is disclosed by the combination of *Samuel* and *Shin*.

264. As discussed above, *Samuel* expressly suggests that its case could be implemented with an envelope structure. A POSA would find the elements of claim element 15(c) met by an envelope structure. However, I acknowledge that *Samuel* does not detail the features of the contemplated envelope structure.

265. However, *Shin* does provide detail regarding its envelope structure. *Shin* discloses “an envelope formed by integrally joining left and right edges and bottom edge of a first side and a second side.” EX-1004, Abstract, cl. 1 (“left and right edges and bottom edges of first and second sides are integrally combined to form the envelope”), 6 (“wherein the first side 3 and the second side 5 are joined at their left edge 12, bottom edge 14, and right edge 16 to form a mobile phone storage space 7”). The “first side 3” and “second side 5” in *Shin* are “a front and a rear panel” as required by claim elements 15(b) and 15(c). See EX-1004, Figs. 2, 5, 7, 9, 10

(showing the profile view of various *Shin* envelope embodiments). The second side (5), which is a “rear panel,” has a left edge (12) and right edge (16), which are “a second set of longitudinal edges,” upper edge 18 is a “second top edge” and bottom edge (14) is the “a second bottom edge” required by 15(c). *See, e.g.*, EX-1004, Figs. 1, 3a, 4, 6.

266. Above I have annotated *Shin*’s Figure 1 (which is a view of the front panel) and Figure 2 (which is a side view showing front and rear panels) to show how the *Shin* envelope structure meets the requirements of claim element 15(c). I note that each panel in the *Shin* structure has a laterally opposed lower edge but because Figure 1 is viewing the front panel only, I have only annotated the laterally opposed lower edge for the front panel. *See also* EX-1004, claim 1 (specifying that there are “bottom edges” that are “integrally combined” with the left and right edges of the first and second sides to form the envelope).

267. As shown in the annotated *Shin* Figures 1 and 2 above, the first (left edge 12), second (right edge 16), and lower edges (bottom edge 14) of the front and rear panels (first side 3 and second side 5) are secured together in the *Shin* envelope. EX-1004, Figs. 1–2. The *Shin* envelope is labeled “1” in Figures 1–3a but referenced in illustrations of embodiments with additional features as “101,” “201,” or “301.” EX-1004, Figures.

268. *Shin* discloses that opening portion (9) of its mobile phone storage envelope allows the user to put mobile phone (C) into the envelope. EX-1004, Figs. 2, 5, 7, 9 (each showing opening portion 9). Figures 1 and 6 show that the opening is formed at the top of the envelope by securing the right, left, and lower edges together while leaving opening portion (9) unsecured (when open). EX-1004, Figs. 1, 6. *Shin* specifically discloses that the “envelope [is] formed by integrally joining left and right edges and bottom edge of a first and a second side.” EX-1004, Abstract; *see also* EX-1004, claim 1 (“left and right edges and bottom edges of first and second sides are integrally combined to form the envelope”).

269. *Shin* further details that “the edges (12, 14, 16) of the first side (3) and the second side (5) are integrally joined by methods such as thermal compression, adhesive bonding, or folding” and “[a]n opening 9 through which a mobile phone can be inserted and removed is formed at an upper edge 18 of the first side 3 and the second side 5. Therefore the mobile phone C is stored through the opening portion 9.” EX-1004, 6.

270. A POSA would understand these disclosures in *Shin* to teach that the secured edges of the *Shin* envelope “define an opening of the case for receiving a mobile electronic device.”

**15(d) a lock proximately located to the opening of the case,
the lock configured to at least partially secure the opening**

and render the user unable to access the mobile electronic device until a predetermined condition is met,

271. Claim element 15(d) is disclosed by the combination of *Samuel* and *Shin*.

272. *Samuel* depicts a “locking means” in its Figure 1 at 8, 10, 12, and 14, which is the claimed “lock proximately located to the opening of the case.” EX-1003, Fig. 1. Samuel’s locking means includes opposing plates with securably mateable female members (as shown in 12, 14) and male members (as shown in 8, 10). EX-1003, Fig. 1, [0083].

273. This structure is “configured to at least partially secure the opening and render the user unable to access the mobile electronic device until a predetermined condition is met.” For example, *Samuel* discloses that means (18) inside the case is able to monitor the state of the case (such as its location) and receive and act on closing or opening instructions received by electronic signals. EX-1003, [0088]–[0090], [0105]–[0109], [0124]–[0125], [0174]–[0178], cl. 1.

274. *Shin* also teaches use of a “lock.” Specifically, *Shin* describes a closing member (20/120/220) near the opening 9 that includes a male profile strip (21/121/221) and a female profile strip (23/123/223) that engage with each other to lock opening 9. EX-1004, Figs. 2, 5–7, 9–10, and pp. 7–8. In addition, *Shin* teaches that the male and female strips (*i.e.*, opposing plates with securably mateable female

and male members) that make up the closing member may be a zipper that locks the envelope, which meets claim element 15(d)’s requirement to “at least partially secure the opening.” EX-1004, 8.

275. A POSA also would have found using the *Shin* envelope with the enhanced security of the locking means described in *Samuel* to be a natural modification of the locking means described in *Shin*.

276. Moreover, the *Samuel* locking means prevent the user from accessing the mobile electronic device (or whatever object is stored in a *Samuel* case) because the locks cannot be unlocked until means (18) receives the appropriate signal to unlock the case. *See, e.g.*, EX-1003, [0109], [0124]–[0125].

277. Like *Samuel*, *Shin* teaches that the lock is non-disengageable by the user in light of its objective to block cellphone signals for a pre-set period of time through a “timer means” (80) to prevent use in public places. Indeed, *Shin*’s objective to block cellphone signals further suggests combining *Shin*’s envelope structure with *Samuel*’s locking means to further limit the user’s access to the cellphone stored in the *Shin* envelope during a pre-set period of time or in a specific geographic location (*e.g.*, in a concert hall or church). EX-1004, 5, 9.

278. Finally, *Samuel* teaches the locking means cannot be unlocked—thus “render[ing] the user unable to access the mobile electronic device”—until some predetermined condition is met. Specifically, *Samuel* discloses that a condition for

deliverance of the signal to open the locking means may be whether the case has met a predetermined condition such as arriving at a predetermined location. EX-1005, [0038], [0069], [0073], [0125].

279. For these reasons, a POSA would understand the disclosures of *Samuel* and *Shin* to render obvious the requirements of claim element 15(d)—“a lock proximately located to the opening of the case, the lock configured to at least partially secure the opening and render the user unable to access the mobile electronic device until a predetermined condition is met.”

15(e) the predetermined condition being associated with a physical presence of the case being outside of a defined geographic region.

280. Claim element 15(e) is disclosed by the combination of *Samuel* and *Shin*.

281. *Samuel* addresses the secure transportation of an object and uses its predetermined location (i.e., the case’s arrival at a destination address)—which is outside of a defined geographic region enclosing the case’s departure address—as a condition for sending a signal to unlock the case. *See, e.g.*, EX-1003, [0038], [0058], [0123]–[0125]. Therefore, *Samuel* discloses the requirement in claim element 15(e) that “the predetermined condition being associated with a physical presence of the case being outside of a defined geographic region.”

282. Likewise, *Shin* addresses the need to prevent access to phones in certain venues requiring silence (e.g., “concert halls, churches, courtrooms, lecture rooms, and libraries”). Limiting access by venue is a form of setting a geographic predetermined condition for cellphone access as required by claim element 15(e). Moreover, *Shin*’s explicit description of preventing cellphone access in certain locations provides another motivation to combine the disclosures of *Samuel* and *Shin* to arrive at the invention in claim 15 of the ’078 patent EX-1004, at 5.

J. Claim 16 is Invalid in Light of the Combination of *Samuel* and *Shin*

283. It is my opinion that claim 16 of the ’078 patent is invalid as obvious in light of the combination of *Samuel* and *Shin* as I discuss in greater detail below.

284. I further incorporate here my analysis of the motivations to combine *Samuel* and *Shin* from Section IX.A and my analysis of the disclosures of *Samuel* and *Shin* as applied to claim 15 from Section X.I. As indicated therein, it is my opinion that *Samuel* and *Shin* disclose the “system of claim 15.”

16(a) The system of claim 15, wherein the lock comprises a female plate; and

285. Claim element 16(a) is disclosed by the combination of *Samuel* and *Shin*.

286. *Samuel* teaches a “lock [that] comprises a female plate.” Specifically, *Samuel* illustrates that its locking means (8, 10, 12, 14) include opposing plates with

securably mateable female members (12, 14) and male members (8, 10). EX-1003, Fig. 1, [0083], [0086], [0105]. To a POSA, the securably mateable female members (12, 14) are each a “female plate.”

287. *Samuel* also teaches using a flexible envelope structure rather than the hard case shown in the figures. In the *Samuel* envelope, a POSA would have considered using the same locking means described in *Samuel* as an obvious design choice to secure the front and rear panels of the envelope structure, similar to the locking means (8, 10, 12, and 14) securing upper portion (4) to lower portion (6) in the *Samuel* case embodiment shown in Figures 1 and 2. EX-1003, Figs. 1–2.

288. Put simply, the *Samuel* envelope implemented with a female and a male plate on the top of each panel as the locking mechanism would thus meet the requirement for “the case of claim 1, wherein the shell comprises: a front panel.”

289. Likewise, *Shin* describes an envelope with “male and female profile strips 21 and 23” used to lock the envelope. The profile strips in *Shin* could be easily designed as female and male plates configured to securably mate with one another as described in the ’078 patent. *See, e.g.*, EX-1004, Fig. 2, 5–7, pp. 7–8. A POSA would have been motivated to combine these disclosures in *Samuel* and *Shin* to make the case of claim 16 for the reasons I discussed here and in Section IX.A. *See also* my analysis of claim 15 on which claim 16 depends.

16(b) a male plate, wherein the female plate and the male plate are respectively disposed on the front panel and the rear panel, wherein the female plate and the male plate are configured to securely mate.

290. Claim element 16(b) is also disclosed by the combination of *Samuel* and *Shin*. *Samuel* teaches a lock with “a male plate, wherein the female plate and the male plate are respectively disposed on the front panel and the rear panel, wherein the female plate and the male plate are configured to securely mate.” Specifically, *Samuel* illustrates that its locking means (8, 10, 12, 14) include opposing plates with securably mateable female members (12, 14) and male members (8, 10). EX-1003, Fig. 1, [0083], [0086], [0105]. To a POSA, the securably mateable male members (12, 14) are each a “male plate” and as disclosed in *Samuel*, “the female plate and the male plate are configured to securely mate.”

291. *Samuel* also teaches using a flexible envelope structure rather than the hard case shown in the figures. In the *Samuel* envelope, a POSA would have considered using the same locking means described in *Samuel* as an obvious design choice to secure the front and rear panels of the envelope structure, similar to the locking means (8, 10, 12, and 14) securing upper portion (4) to lower portion (6) in the *Samuel* case embodiment shown in Figures 1 and 2. EX-1003, Figs. 1–2.

292. Put simply, the *Samuel* envelope implemented with a female and a male plate on the top of each panel as the locking mechanism would thus meet the

requirement for “wherein the female plate and the male plate are respectively disposed on the front panel and the rear panel.”

293. Likewise, *Shin* describes an envelope with “male and female profile strips 21 and 23” used to lock the envelope. The profile strips in *Shin* could be easily designed as female and male plates configured to securably mate with one another as described in the ’078 patent. *See, e.g.*, EX-1004, Fig. 2, 5–7, pp. 7–8. A POSA would have been motivated to combine these disclosures in *Samuel* and *Shin* to make the case of claim 16 for the reasons I discussed here and in Section IX.A. *See also* my analysis of claim 15 on which claim 16 depends.

K. Claim 19 is Invalid in Light of the Combination of *Samuel*, *Shin*, and *Simpson*

294. It is my opinion that claim 19 of the ’078 patent is invalid as obvious in light of the combination of *Samuel*, *Shin*, and *Simpson* as I discuss in greater detail below.

295. I further incorporate here my analysis of the motivations to combine *Samuel*, *Shin*, and *Simpson* from Section IX.B and my analysis of the disclosures of *Samuel* and *Shin* as applied to claim 15 from Section X.I. As indicated therein, it is my opinion that *Samuel* and *Shin* disclose the “system of claim 15.”

296. Likewise, disclosures in *Simpson* are relevant to the requirements of claim 15. *Simpson* is also directed at a “Security Case.” EX-1005, Title, Figs. 1–2.

Simpson discloses that its invention:

relates to the secure transportation of valuable objects; in particular, it relates to a portable container which restricts access to the contents within the container to authorized individuals and enables the container to be tracked.

EX-1005, [0002]; *see also* EX-1005, [0009]–[0013] (objects of the invention including the use of restricted entry mechanisms and/or electronic keys). Thus, *Simpson* also teaches a system with a case that restricts access to the “valuable object” being stored within the case in a way that selectively limits the user’s ability to control that object.

297. *Simpson* discloses examples of valuable objects that could be securely transported within its case as “jewelry, financial files, financial documents, credit cards, intelligence files, etc.” EX-1005, [0003]. One embodiment of the *Simpson* case is shown in Figure 2 below, where the opening of *Simpson*’s case is outlined in red, and the cavity (18) highlighted in light blue:

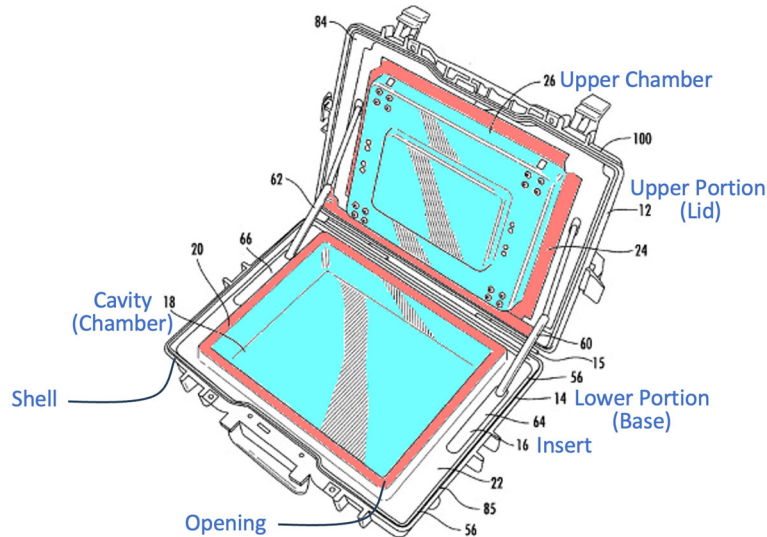


FIG. 2

A POSA would understand from this illustration, as well as the other figures and descriptions in the text, that a mobile electronic device, such as a cellphone or tablet computer, could be a valuable object secured inside the *Simpson* case.

298. *Simpson* is also relevant to claim element 15(a). In summarizing his invention, *Simpson* explains:

The present invention involves the provision of a security case for storing and transporting an item in a secure manner. The case includes a lid coupled to a base and cooperating therewith to define ***a closable storage chamber***. At least one lock device is located inside the case and operable to selectively maintain the lid locked in a closed condition to the base, selectively resisting access to the storage chamber.

EX-1005, [0007] (emphasis added).

299. Additional detail is provided in Figure 2 and its accompanying description in *Simpson*, which discusses that case (10) has a lower portion (14) that includes “insert 16 [that] includes a cavity or lower chamber 18.” EX-1005, Fig. 2,

[0036]; *see also* EX-1005, Fig. 6A (showing insert 16 with a cavity to hold one or more valuables).

300. *Simpson* further teaches that the “valuable articles to be securely transported are housed within the cavity or chamber 18.” EX-1005, [0036]. A POSA would understand that the valuable articles to be transported in a *Simpson* case could include a user’s mobile electronic device.

301. Further, a POSA would understand that the *Simpson* case is “sized to receive a mobile electronic device.” First, the valuables discussed in *Simpson* are of a similar size to mobile devices such as cellphones or tablet computers, and a POSA thus would have considered mobile devices as other examples of valuables that could be stored in the *Simpson* case. EX-1005, [0003] (discussing “jewelry, financial files, financial documents, credit cards, intelligence files”).

302. Second, a POSA would understand that the portable security case as described and illustrated was sized to accommodate a mobile electronic device. EX-1005, Fig. 2; *see also* EX-1005, [0007] (“[t]he case includes a lid coupled to a base and cooperating therewith to define a closeable storage chamber”), [0008] (“self contained, portable security case or container”), [0035] (“portable case or container 10 which is constructed and arranged to securely transport valuable articles”), [0036] (“valuable articles to be securely transported are housed within the cavity or chamber 18”). For example, Figure 2 illustrates what I refer to as a briefcase embodiment,

and, as is commonly known, a typical briefcase is sized to accommodate mobile electronic devices such as a tablet computer. EX-1005, Fig. 2.

303. *Simpson* also teaches that in the unlocked and open state, there is an opening that allows the mobile electronic device to be placed in the storage chamber, which defines the cavity (18) in the Fig. 2 embodiment. EX-1005, Fig. 2 (perspective view of the interior of the *Simpson* case); *see also* EX-1005, Fig. 6B (cross-sectional view of a lower portion of the case with insert 16), Fig. 11B (cross-sectional view of the 11A embodiment in an open position), [0017], [0022], [0029].

304. *Simpson* also discloses claim element 15(d). As the Abstract discloses, the *Simpson* case is a “self contained portable security case or container . . . [that is] secure in its locked condition by locks which are preferably operated by an electronic key . . . [that] can be programmed to open the case or container dependent upon various different conditions, for example, location, time, identification of operator, etc.” EX-1005, Abstract. Specifically, in the illustrated embodiment of Figure 2, the *Simpson* case includes shell (16) that is part of the lower portion of the case (14), which is secured to the lid (12) through locks (28). EX-1005, Fig. 2; *see also* EX-1005, Figs. 3, 6A–6C, 7–8 (locks 44), [0002] (“relates to a portable container which restricts access to the contents within the container”), [0036]–[0039] (describing how locking mechanism secures the case closed). *Simpson* describes its locking mechanism and how it can be unlocked using an “electronic key”:

The manner in which the locks 28 secure the lid 12 to the lower portion 14 is illustrated in FIG. 6C. A pin or locking member 36 is an element of each of the four locks 28. The pin 36 moves in a longitudinal direction between an extended or locked position, as illustrated in FIGS. 2 and 6C, and a retracted or open position. In the retracted or open position, the pin 36 does not extend into an aperture in the side of the lower portion 14 of the case. In the locked position, the pin 36 extends into the aperture 38 in the side of the lower portion (FIG. 6C).

Each of the pins 36 is operated by an electrically powered device such as a solenoid 40. The solenoids 40 are preferably operated according to the schematic of FIG. 8. In place of solenoids 40, stepper motors can also be employed. The stepper motors would preferably drive a worm which is drivingly coupled to a worm gear (not shown), which in turn operates the pins 36. An advantage of such a stepper motor drive system is that the locks 28 cannot be driven backward, thereby preventing access to the interior of said case. An electronic key 42 is utilized to open lock 44 (FIGS. 7 and 8). When lock 44 is open, an electrical circuit is completed. The electrical circuit includes lock 44, a battery 46, a fuse 48, and solenoids 40.

...

The electronic key 42 can be programmed to only open specific locks 44. The electronic key 42 includes a plurality of contacts 43 which electrically connect with respective contacts (not shown) on the lock 44. Preferably, an electronic key locks the case 10 at a point of departure and a separate electronic key at the final destination opens the case 10. The electronic keys can also be programmed to only open the case at a certain time or within a certain time frame or window as preprogrammed. Another feature of the electronic key is that it can be disabled or enabled from a signal transmitted by a satellite, a cell phone, or a radio frequency transmission.

EX-1005, [0037]–[0039].

305. As shown in Figure 6C below, to which I have added annotations and highlights, the *Simpson* locking mechanism includes opposing plates with securably

mateable female and male members to secure lid (12) to the lower portion (14) as part of the locking mechanism that includes an aperture (38, highlighted in light blue) in the side of the lower portion (14) through which pin (36, highlighted in green) may be extended to lock the case (10). EX-1008, Fig. 6C, [0037].

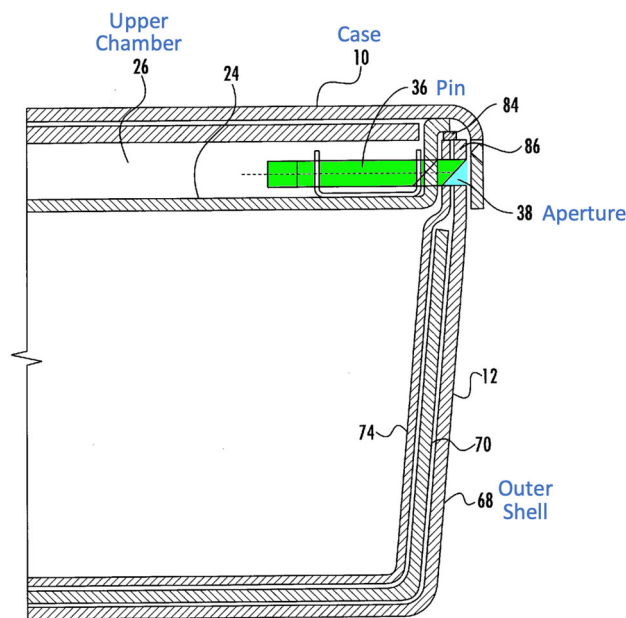


FIG. 6C

306. Further, in the locked position, the contents inside the case are inaccessible to the user, and *Simpson* further teaches that the locking means cannot be disengaged until the electronic key (42) is used to open the lock. EX-1005, [0037]–[0039]. Furthermore, *Simpson* teaches that the ability to unlock with the electronic key may be conditioned on time or geography and the user cannot disengage the *Simpson* locking mechanism until that “predetermined condition” is

met (e.g., “within a certain time range” or “at a specific predetermined location”). EX-1005, [0039]–[0040], [0045].

307. Considering these disclosures, a POSA would understand that the Simpson locking mechanism is therefore “proximately located to the opening of the case, the lock configured to at least partially secure the opening,” which will “render the user unable to access the mobile electronic device until a predetermined condition is met.” so that the valuable stored inside (including a user’s mobile device per my discussion above) is inaccessible to the user.

19. The system of claim 15, wherein the predetermined condition is further associated with: a passage of time.

308. The additional limitation in claim 19 is disclosed by *Simpson*. Specifically, as I indicated above, the electronic key (42) used to unlock case (10) may be programmed to “only open the case at a certain time or within a certain time frame or window as preprogrammed.” EX-1005, [0039]. In addition, *Simpson* discloses that its “controller 54 can be programmed to recognize authorized opening of the case within a certain time range.” EX-1005, [0045]. A POSA would understand these disclosures to mean that a “predetermined condition” for opening the *Simpson* case is the passage of time.

XI. INDEFINITENESS OF CLAIMS 1–5, 9–11, 15–16 AND 19 OF THE '078 PATENT

309. Each of the independent claims of the '078 patent requires that the predetermined condition is “*associated with*” either a “geographic/geographical region” or “a physical presence of the case being outside of a defined geographical region”:

- Claim 1: “the lock further configured to unlock to enable access to the mobile device based on a predetermined condition *associated with* a geographic region;”
- Claim 9: “wherein the lock is further configured to unlock to enable access to the mobile device in accordance with a predetermined condition *associated with* a geographical region;” and
- Claim 15: “the predetermined condition being *associated with* a physical presence of the case being outside of a defined geographical region.”

EX-1001, cls. 1, 9, 15 (emphasis added).

310. Certain dependent claims further limit the “predetermined condition,” but none provide guidance as to what “associated with” means:

- Claim 2: “wherein the predetermined condition is *further associated with* a time period;”
- Claim 3: “wherein the geographic region corresponds to a physical position of the case respective to a geographic area of a venue [referring to the geographic region in the “associated with” phrase of claim 1];”
- Claim 10: “wherein the predetermined condition is *further associated with* a time period, wherein the geographic region

corresponds to a physical position of the case respective to a geographic area of a venue;”

- Claim 19: “wherein the predetermined condition is *further associated with*: a passage of time.”

EX-1001, cls. 2, 3, 10, 19 (emphasis added).

311. While claims 2, 10, and 19 all use the phrase “associated with,” they do so in the context of the predetermined condition being “*further* associated with” rather than providing clarity as to the scope of “associated with” as used in the independent claims. For example, by its dependence claim 2 requires a predetermined condition “associated with a geographic region” and “further associated with a time period,” but provides no clarity on the scope of what would meet the requirement that the predetermined condition be *associated with* both a geographic region and a time period.

312. In many ways the claims of the ’078 patent are the same as or similar to certain claims of the ’788 patent, but where the ’788 patent claims that the “predetermined condition *is*” something, the ’078 patent claims the predetermined condition “*associated with*” something. For example, claim 15 of the ’078 patent claims “the predetermined condition being *associated with* a physical presence of the case being outside of a defined geographical region” and claim 1 of the ’788 patent claims “the predetermined condition *is* physical presence of the case outside of a defined geographical region.”

313. I understand from counsel that when a patentee uses different words in a claim, they are presumed to have different meanings. In the '078 patent, the prosecution history supports the concept that “is” and “associated with” should have different meanings because a nonstatutory double patenting rejection was withdrawn after the patentee amended the claims to add the “associated with” phrases to the independent claims. EX-1007-162; *see also* EX-1007-148–151 (amending pending claims 19 (to add “based on a predetermined condition associated with a geographic region), 20 (to add “is further associated with”), 27 (to add “associated with a geographical region”), 28 (to add “is further associated with”), 33 (to add “the predetermined condition being associated with” and “of the case being outside of a defined geographical region”), and 37 (to add “further associated with”)).

314. However, there is nothing in the '078 patent or its prosecution history that clarifies what “associated with” is supposed to mean as applied to the predetermined condition. The only use of the phrase “associated with” in the specification (as opposed to the claims) is in reference to “an auxiliary processor among several processors associated with the mobile electronic device 102.” EX-1001, 8:55–56. That use does not provide a POSA any clarity regarding the use of “associated with” in the '078 patent claims in reference to the predetermined condition.

315. I understand that in claim construction briefing in the WDTX Action, Yondr has argued that certain examples within the specification of the '078 patent relate to the “associated with” phrases. EX-1015-022–023. Below I address each one.

316. First, Yondr has pointed to the '078 patent specification at 6:57–7:4:

Thus, in one embodiment represented by FIG. 5, the at least partially secured locking means 114 may be touched to the EAS detacher 502 so that any electromagnetic fields enabling the locking means 114 to remain secured are interrupted. This, in turn, may allow the locking means 114 to become unsecured and further exposes the mobile electronic device 102 within the case as in FIG. 6. In such an embodiment, it is contemplated that the predetermined condition involves locating an EAS detacher. In the event that the system and apparatus for selectively limiting user control of an electronic device is employed to reduce distractions at a communal event, such means for unlocking the case may be placed outside of any audience viewing area or even at venue exit ways.

The above excerpt from the '078 patent specification refers to one embodiment where a predetermined condition “*involves* locating an EAS detacher” without actually defining what that predetermined condition would be. Nor is there any indication that this “involves” phrase should be interpreted as the same as the “associated with” phrases, which require associated with a geographic region or a physical presence within that region not merely “locating an EAS detacher.” Moreover, this embodiment does not specify that the predetermined condition it

references is a configuration of the lock as required by the '078 patent claims as opposed to a requirement for user-initiated action. *See* EX-1001, cls. 1, 9, 15.

317. Another excerpt cited by Yondr is the '078 patent specification at 2:65–3:10:

For example, predetermined condition may relate to geographic location or timing. Indeed, in one embodiment, the case may be used to render a mobile electronic device inaccessible during a communal event such as a show, demonstration, display, or athletic competition within a concert hall, center, arena, or similar venue. In such scenarios, the locking means may only become disengageable if a user leaves the venue. Alternatively, the locking means may only become disengageable at such a time as the communal event is completed. As yet another alternative, the locking means may become disengageable when a user locates venue staff who are equipped to physically disengage the locking means on their behalf.

318. In my opinion this general statement does not assist a POSA in defining what it means for the predetermined condition to be “associated with” something. At best, it suggests that in the described scenario, the user leaving the venue *is* the trigger to unlock the locking means.

319. Yondr additionally cited the excerpt of the '078 patent specification at 6:38–47:

In one embodiment, the case may be outfitted with locking means 114 comprising a manual, key-operated latch wherein means for unlocking comprise a corresponding key. In such an embodiment, the case 100 may be manually locked or unlocked by venue staff or other members in possession of such a key. Thus, the system for selectively limiting user control of an electronic device may involve a predetermined condition requiring the user of the electronic device 102 to locate venue

staff or other members in possession of the key to manually unlock the case 100 on user's behalf.

320. Again, the above excerpt concerns “a predetermined condition requiring the user . . . to locate venue staff.” That excerpt is not relevant to (1) what “associated with” means; or (2) what the “associated with” phrases in the issued '078 patent claims mean given that requiring a user to locate venue staff would not be the same to a POSA as a predetermined condition that limits the configuration of the lock as required in the '078 patent claims.

321. Yondr further cited the excerpt of the '078 patent at 3:11–22:

In an embodiment, the locking means may be remotely engageable and disengageable. The locking means may be equipped with electronic receivers such as a radio frequency identification (RFID) configured to instruct the locking means to alternatively engage and disengage when it receives a signal from a proximity transmitter indicating that the case has respectively entered and exited defined geographical region. Thus, for example, the locking means may receive instructions to lock the device when it is located within an audience seating area of a venue or concert hall. Then, the locking device may receive instructions to unlock the device when it is located outside of the audience area of a venue or concert hall.

322. I agree that the above embodiment is related to the '078 patent claims. Nevertheless, this excerpt does not discuss what it means for the “predetermined condition” to be “associated with” a geographical region. Rather, it discloses that in this particular embodiment, a signal transmitter transmits a signal to disengage the locking means (i.e., unlock) when the case exits a defined geographical region.

323. Yondr also cited the excerpt of the '078 patent at 7:10–20:

For example, with reference to FIG. 7, another embodiment of the system may comprise locking means 114 having electronic receivers such as the aforementioned RFID tag disposed therein and further configured to instruct the locking means to alternatively engage and disengage when it receives a signal from a proximity transmitter 702. Thus, for example, the locking means may receive instructions to lock the device when it is located in 100a the geographical region 704 within reach of the transmitter 702.

324. Like the previous excerpt, this one does not mention the predetermined condition or it being “associated with” anything. Rather, this excerpt acknowledges that a signal transmitter could be used with the invention and provides the specific example of the locking means receiving instructions to lock the device when it is within a geographical region within the reach of the transmitter.

325. Finally, Yondr cited the excerpt of the '078 patent specification at 7:26–36:

As a more particularized example, a transmitter signal may be configured to cover the geographical region of an audience seating area at a venue hosting a communal event. When within the audience seating area, the case 100a may remain secured so that a user is unable to access or control the mobile electronic device contained therein. However, when the case 100b travels outside of the audience seating area, such as to a foyer, lobby, or restroom, the locking means 114 may become unsecured to provide access to the mobile electronic device.

326. The above excerpt describes that a transmitter signal may cover a geographical region of interest to keep the case locked when within that region and unlocked once the case leaves that region. Like the prior excerpt that focused on using a transmitter to signal to the locking means, this excerpt does not specify or

provide guidance on the scope of what it means for the “predetermined condition” to be “associated with” something.

327. As I indicated in my prior art analysis above, a POSA can reasonably identify the scope of claims that require that the predetermined condition “is” something. Claims that use the “is” construct make sense from the technical perspective: the programming that controls the lock is evaluating whether or not the specific condition exists to determine whether to unlock the case.

328. By contrast, when “associated with” is used, it is not reasonably clear to a POSA to what extent something that would not meet the “is” construct does meet the “associated with” construct. For example, knowing that *ambient air temperatures* are *associated with geographic regions* (e.g., the average air temperature of Fairbanks, Alaska is much lower than that of Phoenix, Arizona), would a determination that the ambient temperature around a case has reached a predetermined value meet the claim 1 requirement for the “predetermined condition *associated with a geographic region*”? Similarly, knowing that *ambient air temperatures* are *associated with time periods* (e.g., average air temperatures at midday are higher than those at midnight; average air temperatures in January are lower than those of July in the northern hemisphere), would a determination that the ambient temperature around a case has reached a predetermined value meet the claim

2 requirement that the “predetermined condition is further *associated with a time period*”?

329. The distinction in the words themselves suggests ambiguity—“is” being more definite and “associated with” being more vague. I understand that in a typical patent, when vague language is used, it is not always found indefinite. Typically, the patent or prosecution history will provide guidance as to the scope of what the claim means in light of the vague language. I do not find any such guidance here regarding the ’078 patent.

330. For these reasons, it is my opinion that claims 1, 9, and 15 (as well as the claims that depend from them: 2–5, 10–11, 16, and 19) are invalid as indefinite.

XII. LACK OF PATENT ELIGIBILITY OF CLAIMS 1–5, 9–11, 15–16 AND 19 OF THE ’078 PATENT

331. I outlined my understanding of the law regarding patent-eligibility more fully in Section V.C. Briefly, I understand that the Supreme Court has established a two-part test for analyzing patent eligibility under 35 U.S.C. § 101:

- (1) Determine if the claims are directed at a law of nature, physical phenomena or abstract idea; and
- (2) Consider whether the claims include an element or combination of elements called an “inventive concept” that ensures the patent in practice amounts to “significantly more” than a patent on the ineligible law of nature, physical phenomena, or abstract idea.

332. I understand that as part of satisfying the second step, there must be additional features that are more than well-understood, routine, or conventional components.

333. Regarding each of the Challenged Claims of the '078 patent, I was asked to analyze whether each met the patent eligibility requirements under 35 U.S.C. § 101 using the above two-part test. As I explain in greater detail below, it is my opinion that none of the Challenged Claims meets the patent eligibility requirements under 35 U.S.C. § 101 and therefore each is invalid.

334. My opinion is informed by my experience and the analysis I have done of the '078 patent, its prosecution history, including references cited therein and in the prosecution history of the related '788 patent, and the prior art. I reserve the right to rely on my analysis in other sections of this declaration to support my opinions regarding the lack of patent eligibility.

335. In addition, although I may shorten the claim language for discussion purposes, I have considered the full claim language of each of claims 1–5, 9–11, 15, 16, and 19 in my reaching my opinion that each lacks patent eligibility under 35 U.S.C. § 101.

336. For the sake of completeness, I address each independent claim with its respective dependent claims below.

337. Claim 1 of the '078 patent is representative of claims 1–5. Claim 1 (emphasis and indicators added for ease of reference) requires:

1 (preamble) A case comprising:

(a) a shell defining a cavity sized to accommodate a mobile device, the shell having an opening to receive the mobile device; and

(b) a lock positioned proximate to the opening of the shell, the lock configured to render the mobile device at least partially inaccessible upon the lock being locked with the mobile device within the cavity of the shell, (c) the lock further configured to unlock to enable access to the mobile device based on a predetermined condition associated with a geographic region.

338. Claim 2 further requires that “the predetermined condition is further associated with a time period.” Claim 3 further limits claim 1 to require that “the geographic region corresponds to a physical position of the case respective to a geographic area of a venue.” Claim 4 further requires that the shell comprises: a front panel; and a rear panel, the rear panel being connected to the front panel on each longitudinal edge and on a lateral edge distally opposed to the opening. Claim 5 further requires that “the lock is configured to unlock the case based on interaction with a detacher.”

339. It is my opinion that, under the first step of the Supreme Court’s patent eligibility test, claims 1–5 are directed to the abstract idea of the conditional unlocking of a case.

340. It is also my opinion that nothing in claims 1–5 transform that abstract idea into the “something more” required to transform the idea into a patent-eligible application of the idea under step two of the Supreme Court’s test. The limitations in claims 1–5, considered both individually and as a combination, were well-known, routine, and conventional before the filing date of the ’078 patent.

341. For example, lockable “cases” that could secure valuables were well-known, routine, and conventional, as evidenced by the cases disclosed in *Shin*, *Samuel*, *Simpson*, *Theobald*, and *Stewart*. See, e.g., EX-1004, Abstract, Figs. 1–2, pp. 6–7; EX-1003, Figs. 1–2, [0083]–[0084]; EX-1005, Abstract, Figs. 1–2; EX-1006, Fig. 6, pp. 4, 9; EX-1008, Figs. 1–3, [0021]–[0026].

342. Similarly, lockable cases such as those described in *Shin* and *Stewart* were well-known, routine, and conventional and had a “shell defining a cavity sized to accommodate a mobile device” and an “opening to receive the mobile device.” EX-1004, Abstract, Figs. 1–2, pp. 6–7; EX-1008, Figs. 1–3, [0021]–[0026]. And, as I discussed above, a POSA would have understood that even though prior art like *Samuel* and *Simpson* more generically referred to the objects or valuables stored inside, the cases described were sized to accommodate a mobile device, for example, a cell phone, which is similar in size to the cash disclosed to have been transported in those cases, which further demonstrates that those limitations were nothing more than requiring use of well-known, routine, and conventional technologies. See EX-

1003, Figs. 1–2, [0021], [0083]–[0084], [0091]; EX-1005, Abstract, Figs. 1–2, [0002], [0007].

343. Further, the concept of a “lock” that closes a container to prevent access to the contents inside has been known for hundreds of years and the prior art demonstrates that even a “smart” lock “configured to render the mobile device [or whatever object is stored in the case] at least partially inaccessible” when locked with the mobile device inside and “configured to unlock to enable access . . . based on a predetermined condition” was well-known, routine, and conventional before the effective filing date of the ’078 patent as evidenced, for example, by *Samuel*, *Simpson*, and *Coleman*. EX-1003, [0038], [0058], [0105]–[0106], [0109], [0123]–[0125], [0137]–[0141]; EX-1005, [0007]–[0008], cl. 1; EX-1010, Abstract, Figs. 1–2, 1:7–12, 5:24–28.

344. I also note that both *Samuel* and *Simpson* specifically evidence that configuring a lock to unlock based on a predetermined condition associated with a geographic region was well-known, routine, and conventional as of the effective filing date of the ’078 patent. EX-1003, [0038], [0058], [0123]–[0125]; EX-1005, [0039], [0045].

345. It is also my opinion that the limitations requiring the “predetermined condition” to be “associated with” a geographic region or time period or that the “geographic region corresponds to a physical position of the case respective to a

geographic area of a venue” are just additional iterations of the underlying abstract idea that do not transform that abstract idea into a technical application sufficient for patent eligibility.

346. Further, as noted by the Examiner of the ’078 patent, the concept of configuring a lock to unlock based on timing (such as “a time period” or the “passage of time”) was well-known, routine, and conventional as of the effective filing date of the ’078 patent as evidenced by *Simon*. EX-1007-088; *see also* EX-1009, Abstract, 1:7–13, 2:7–11. In addition, *Simpson* evidences that conditioning the unlocking of a lock on a time period or the passage of time was well-known, routine, and conventional before the ’078 patent was filed. EX-1005, [0039], [0045].

347. In addition, *Samuel*, *Shin*, *Stewart*, and *Theobald* each demonstrate that the envelope structure of a case that has a front and rear panel connected together on each longitudinal edge and on the lateral edge away from the opening was routine, conventional, and well-known before the effective filing date of the ’078 patent. EX-1003, [0021], [0091]; EX-1004, Figs. 1–14, p.6; EX-1008, Figs. 1–3, [0021]–[0022]; EX-1006, Fig. 6, pp. 4, 9.

348. In addition, the prevalence of discussions of magnetic or electromagnetic locks in the prior art, including the use of detachers to unlock such locks such as in *Theobald* and *Nguyen* demonstrates that a requirement for a detacher does not impart the “something more” required to transform the abstract idea into a

patent-eligible application. EX-1006, Fig. 5, pp. 8–9 (detacher 78); EX-1011, Fig. 9 (showing a magnetic detacher assembly 81 to separate a locking mechanism), 8:4–15; *see also* EX-1003, [0086] (“locking means can be of the electromagnetic type”); EX. 1010, 5:4–6 (“locking assembly further includes a pair of electromagnets”).

349. Even considering the elements of claims 1–5 as a combination, there is nothing that provides the “inventive concept” outside of the abstract idea itself, which I understand is not sufficient to confer patent eligibility.

350. Claim 9 of the ’078 patent is representative of claims 9–11. Claim 9 requires:

9 (preamble) A case comprising:

(a) a shell defining a cavity sized to accommodate a mobile device, the shell having an opening to receive the mobile device; and

(b) a lock positioned proximate to the opening of the shell, the lock configured to at least partially secure the opening of the shell, the lock being further configured to lock the shell and render the mobile device at least partially inaccessible,

(c) wherein the lock is further configured to unlock to enable access to the mobile device in accordance with a predetermined condition associated with a geographical region.

351. Claim 9 is nearly identical to claim 1, and I therefore incorporate my analysis above as to claim 1 into my analysis of the patent-eligibility of claim 9 of the ’078 patent. I do not see anything in the differences between the claim language in claim 1 or claim 9 that alters my analysis of the two-step test for patent eligibility.

352. Claim 10 combines the additional limitations of claims 2 and 3 by further requiring of claim 9 that “the predetermined condition is further associated with a time period, wherein the geographic region corresponds to a physical position of the case respective to a geographic area of a venue.” I therefore incorporate my analysis above as to claims 2 and 3 into my analysis of the patent-eligibility of claim 10 of the ’078 patent.

353. Claim 11 is identically directed at an envelope structure for the case as in claim 4 and further requires “the case of claim 9, wherein the shell comprises: a front panel; and a rear panel, the rear panel being connected to the front panel on each longitudinal edge and on a lateral edge distally opposed to the opening.” I therefore incorporate my analysis above as to claim 4 into my analysis of the patent-eligibility of claim 11 of the ’078 patent.

354. It is my opinion that, under the first step of the Supreme Court’s patent eligibility test, claims 9–11 are directed to the abstract idea of the conditional unlocking of a case.

355. It is also my opinion that nothing in claims 9–11 transform that abstract idea into the “something more” required to transform the idea into a patent-eligible application of the idea under step two of the Supreme Court’s test. The limitations in claims 9–11, considered both individually and as a combination, were well-known, routine, and conventional before the filing date of the ’078 patent.

356. Claim 15 of the '078 patent is representative of claims 15, 16, and 19.

Claim 15 requires:

15 (preamble) A system comprising: a case sized to receive a user's mobile electronic device, the case including:

(a) a front panel having a first set of longitudinal edges, a first top edge and a first bottom edge, and

(b) a rear panel having a second set of longitudinal edges a second top edge and a second bottom edge, wherein the first set of longitudinal edges are respectively secured to the second set of longitudinal edges and the first bottom edge is secured to the second bottom edge to define an opening of the case for receiving a mobile electronic device; and

(c) a lock proximately located to the opening of the case, the lock configured to at least partially secure the opening and render the user unable to access the mobile electronic device until a predetermined condition is met,

(d) the predetermined condition being associated with a physical presence of the case being outside of a defined geographical region.

357. There are substantial similarities between claims I have already addressed and claim 15. Specifically, I have previously addressed above and incorporate my analysis here the “case,” “sized to accommodate a mobile device” (whether the case is sized or the cavity inside the case is so sized makes no difference to my analysis; additionally, whether we are talking about a mobile device or a mobile electronic device makes no difference to my analysis), “opening,” “lock” (including as expressed more fully in claim element 15(c)), and “predetermined condition” elements in claim 1. In addition, I have addressed and incorporate my

analysis here regarding the envelope structure required by the limitation of claim 4, which also demonstrates that the limitations of claim elements 15(a) and 15(b) were nothing more than well-known, routine, and conventional technologies as of the effective filing date of the '078 patent. Further, for purposes of analysis of the patent-eligibility of the claims, I do not find the small wording differences between the claim 3 and claim element 15(d) limitations to be material, and therefore I incorporate here my analysis of claim 3 as equally applicable to claim element 15(d).

358. Claim 16 further requires “the system of claim 15, wherein the lock comprises a female plate and a male plate, wherein the female plate and the male plate are respectively disposed on the front panel and the rear panel, wherein the female plate and the male plate are configured to securely mate.”

359. Claim 19 further requires “the system of claim 15, wherein the predetermined condition is further associated with: a passage of time.” For purposes of patent eligibility, I do not view this slightly different language from that of claim 2 as material, and I therefore incorporate into my analysis of claim 19 here my analysis of the patent-eligibility of claim 2 as equally applicable.

360. It is my opinion that, under the first step of the Supreme Court’s patent eligibility test, claims 15, 16, and 19 are directed to the abstract idea of the conditional unlocking of a case.

361. It is also my opinion that nothing in claims 15, 16, or 19 transform that abstract idea into the “something more” required to transform the idea into a patent-eligible application of the idea under step two of the Supreme Court’s test. The limitations in claims 15, 16, and 19, considered both individually and as a combination, were well-known, routine, and conventional before the filing date of the ’078 patent.

362. In addition to the analysis of other claims I have incorporated by reference here to my analysis of claims 15, 16, and 19, I acknowledge that claim 15 claims a “system” whereas claims 1 and 9 claim a “case.” However, I note that the claim 15 preamble recites a “system” but the only component of that “system” appears to be a “case” that must meet the limitations of claim elements 15(a)–15(d).

363. I do not view the difference between the claims directed at a system versus those directed to a case to impart patent eligibility. The references that describe a lock that can receive signals to lock or unlock, such as *Samuel* and *Simpson*, all describe the case in the context of a system that is able to transmit such signals. *See, e.g.*, EX-1003, [0109] (referring to the system of case 2, means 18, and monitoring system 22); EX-1005, [0045] (referring to a system comprised of the case and controller 54). Thus, the “system” language does not change my opinion that claim 15 fails the two-part test for patent eligibility.

364. I also note that claim 16 addresses limitations that I have not discussed regarding other claims. Specifically, elements directed to securably mateable female and male plates. The use of such plates in locking mechanisms was well-known, routine, and conventional as of the effective filing date of the '078 patent as described in, for example, *Nguyen, Samuel, and Theobald*. EX-1011, Figs. 1, 9, 4:48–5:17; EX-1003, Figs. 1–2, [0083], [0086], [0105]; EX-1006, Fig. 1–6, pp. 4–5. Indeed, the vast majority of locking mechanisms ever produced, from barn door latches to bicycle combination locks to residential deadbolts, are comprised of securably mateable female and male plates. With respect to *Nguyen*, during prosecution of the '078 patent, the Examiner cited it as an example that a lock comprising securably mateable male and female plates disposed on panels was “old, commercially available to the general public, and well known to one below ordinary skill in the art.” EX-1007-091.

365. For these reasons, it is my opinion that each of claims 1–5, 9–11, 15–16, and 19 fails the Supreme Court’s test for patent-eligibility and is therefore invalid.

XIII. NO SECONDARY CONSIDERATION OF NONOBVIOUSNESS

366. As discussed above, I understand that “secondary considerations” may be used to demonstrate nonobviousness if they are present and proven to have a nexus to the claimed invention. I understand that Yondr has not identified any

evidence related to secondary considerations. I am not aware of any other evidence related to secondary considerations, such as commercial success, unexplained results, long felt but unsolved need, industry acclaim, simultaneous invention, copying by others, skepticism by experts in the field, or failure of others, that suggests the claims of the '078 patent are not obvious. If any such evidence is put forth by Yondr during the course of this proceeding or the district court litigation, I reserve the right to supplement my analysis and opinions to address that evidence.

XIV. CONCLUSION

367. I understand this declaration will be submitted in a contested proceeding before the Patent and Trial Appeal Board of the United States Patent and Trademark Office and I may be subject to a deposition in that proceeding. I am prepared to testify regarding my opinions relating to the invalidity of the claims of the '078 patent.

368. In summary, I hold the following opinions:

- Claim 1 of the '078 patent is anticipated by or is obvious in light of the disclosures in *Samuel*;
- Claim 1 of the '078 patent is obvious in light of the disclosures in *Samuel* and *Shin*;
- Claim 2 of the '078 patent is obvious in light of the disclosures in *Samuel*, *Simpson*, and *Shin*;

- Claim 3 of the '078 patent is anticipated by or is obvious in light of the disclosures in *Samuel*;
- Claim 3 of the '078 patent is obvious in light of the disclosures in *Samuel* and *Shin*;
- Claim 4 of the '078 patent is obvious in light of the disclosures in *Samuel* and *Shin*;
- Claim 5 of the '078 patent is obvious in light of the disclosures in *Samuel*, *Shin*, and *Theobald*;
- Claim 9 of the '078 patent is anticipated by or is obvious in light of the disclosures in *Samuel*;
- Claim 9 of the '078 patent is obvious in light of the disclosures in *Samuel* and *Shin*;
- Claim 10 of the '078 patent is obvious in light of the disclosures in *Samuel*, *Shin*, and *Simpson*;
- Claim 11 of the '078 patent is obvious in light of the disclosures in *Samuel* and *Shin*;
- Claim 15 of the '078 patent is obvious in light of the disclosures in *Samuel* and *Shin*;
- Claim 16 of the '078 patent is obvious in light of the disclosures in *Samuel* and *Shin*;

- Claim 19 of the '078 patent is obvious in light of the disclosures in *Samuel, Shin, and Simpson*;
- Claims 1–5, 9–11, 15–16, and 19 are invalid as indefinite; and
- Claims 1–5, 9–11, 15–16, and 19 are invalid as directed to subject matter that is not eligible for patenting under 35 U.S.C. § 101.

369. I hereby declare that all statements made in this declaration of my own knowledge are true and all statements are made with the knowledge that willful false statements are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001.

Dated: July 28, 2025

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Gregory D. Buckner", is written over a horizontal line.

Dr. Gregory D. Buckner
Cary, North Carolina

XV. CURRICULUM VITAE OF DR. GREGORY D. BUCKNER

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PROFESSIONAL PREPARATION

University of Texas at Austin	Mechanical Engineering	Ph.D.	1996
Virginia Polytechnic Institute	Mechanical Engineering	M.S.	1987
Louisiana State University	Mechanical Engineering	B.S.	1986

APPOINTMENTS

2010-present	Professor, Faculty Core Lead (Dynamic Systems, Vibration and Control) Mechanical and Aerospace Engineering, NC State University
2024-present	Consultant, Impact Forensics, Cary NC
2016-2024	Consultant, Accident Research Specialists, Cary NC
2004-present	Affiliate Professor, Biomedical Engineering, UNC-Chapel Hill and NC State University
2018-present	Affiliate Professor, Electrical and Computer Engineering, NC State University
2004-2010	Associate Professor, Mechanical and Aerospace Engineering, NC State University
1999-2004	Assistant Professor, Mechanical and Aerospace Engineering, NC State University
1997-1999	Research Engineer, University of Texas at Austin Center for Electromechanics
1996-1997	Process Controls Consultant, Austin TX
1991-1996	Graduate Research Assistant, University of Texas at Austin
1988-1991	Senior Engineer, Westvaco's Covington Research Center

RESEARCH AND TEACHING INTERESTS

Electromechanical systems (modeling, design, fabrication and control), control systems, mechatronics, applications to automotive systems, industrial processes and medical devices

HONORS

Associate Editor, ASME Journal of Dynamic Systems, Measurement and Control:
2023-present
Board of Governors Award for Excellence in Teaching, North Carolina State University, College of Engineering Recipient, University Finalist: 2023, 2017, 2013.

Carnot Award for Teaching Excellence, North Carolina State University chapter of the American Society of Mechanical Engineers: 2012, 2011, 2010, 2008, 2004, 2000 (award discontinued in 2013)

Faculty Impact Award, North Carolina State University chapter of the American Society of Mechanical Engineers: 2012, 2005 (award discontinued in 2013)

Distinguished Undergraduate Professor Award, N. C. State University Alumni Association, 2007

Ralph R. Teetor Educational Award, Society of Automotive Engineers (SAE International), 2006

New Faculty Research Award, American Society of Engineering Education, Southeast Region, 2002

Outstanding Teacher Award, induction into the Academy of Outstanding Teachers, North Carolina State University, May 2002

NSF CAREER Award - "Intelligent Control Systems for Active Magnetic Bearings: An Enabling Technology for Flywheel Energy Storage Systems", January 2001

PROFESSIONAL SOCIETY MEMBERSHIPS

Pi Tau Sigma - Mechanical Engineering Honor Society

Tau Beta Pi - Engineering Honor Society

Phi Kappa Phi - Academic Honor Society

American Society of Mechanical Engineers (ASME)

Senior Member, Institute of Electrical and Electronics Engineers (IEEE)

American Society for Engineering Education (ASEE)

National Fire Protection Association (develops and publishes the National Electrical Code: NEC, NFPA-70), obtained NEC Certification 1/11/2019

RECENT CONSULTING ACTIVITIES

Electrical Fire: Impact Forensics, Cary NC (2025)

Household Electrical Device Injury: Impact Forensics, Cary NC (2025)

Intellectual Property: GLP Intellectual Property, Milan Italy (2024)

Intellectual Property: DeWitt LLP, Madison WI (2023-2024)

- Trial Testimony 10/22/24 - Fiskars Finland OY AB v. Woodland Tools Inc., Case No. 3:22-CV-540-JDP, Docket No. 435 (on behalf of the Defendant)
- Deposition 8/12/24 – Fiskars Finland OY AB v. Woodland Tools Inc., Case No. 3:22-CV-540-JDP, 2024 WL 3936444 (on behalf of the Defendant)

Pressurized Cylinder Injury: Impact Forensics, Cary NC (2024)

Electrical Fire: Accident Research Specialists, Cary NC (2023-2024)

Intellectual Property: Leydig Voit & Mayer, LTD, Chicago IL (2023)

Medical Device Injury: Stockman O'Connor Connors, PLLC, Shelton CT (2021-2023)

Electrical Fire: Accident Research Specialists, Cary NC (2022)

- Deposition 9/30/22 - J. Medina, W. Diaz v. Samsung Electronics America Inc., Case Number 20-CVS-3755, North Carolina General Court of Justice, Superior Court Division, Johnson County (on behalf of the Plaintiff)

Intellectual Property: Latham and Watkins PLLC, Washington DC (2019-2020)

Electrical Fire: Accident Research Specialists, Cary NC (2018-2019)

- Deposition 5/3/18 - Erie Insurance Exchange v. Harley-Davidson of Greensboro, Inc., Case Number 18-CVS-6075, North Carolina General Court of Justice, Superior Court Division, Guilford County (on behalf of the Defendant)

RESEARCH COLLABORATIONS

Dr. Gil Bolotin (Cardiac Surgery, Academic Hospital of Maastricht, Netherlands), Dr. Matthew Bryant (Mechanical & Aerospace Engineering, NCSU), Dr. Guillaume Chanoit (Veterinary Medicine, NCSU), Dr. Randolph Chitwood (Cardiac Surgery, Brody School of Medicine, ECU), Dr. Richard Cook (Cardiac Surgery, University of British Columbia, Canada), Dr. Denis Cormier (Industrial & Systems Engineering, NCSU), Dr. Channing Der (Lineberger Comprehensive Cancer Center, UNC-CH), Dr. Tiegang Fang (Mechanical & Aerospace Engineering, NCSU), Dr. Angus Kingon (Materials Science & Engineering, NCSU), Dr. Bryan Laffitte (Industrial Design, NCSU), Dr. Rob Richardson (Crop Sciences, NCSU), Dr. Andor Van Den Hoven (Radiology and Nuclear Medicine, University Medical Center Utrecht, the Netherlands), Dr. Daniel Von Allmen (Pediatric Surgery, UNC)

GRADUATE AND POSTDOCTORAL SCHOLAR ADVISING

Victor Zaccardo (PhD, MAE, 2022), Samuel Miller (PhD, MAE, 2021), Stefan Atay (PhD, MAE, 2020), Daniel Kakaley (PhD, MAE, 2018), Christopher Elliott (PhD, MAE, 2017), Bongani Malinga (PhD, MAE, 2016), Jeff Allred (PhD, MAE, 2015), Andrew Richards (PhD, MAE, 2013), Jennifer Hannen Wiest (PhD, MAE, 2013), John Crews (PhD, MAE, 2011), J.P. Lien (PhD, MAE, 2011), Arun Veeramani (PhD, MAE, 2009), Molly Purser (PhD, ISE, 2009), Omar Zohni (PhD, MAE, 2008), Pradeep Pandurangan (PhD, MAE, 2007), Heeju Choi (PhD, MAE, 2005), Nathan Gibson (PhD, MAE, 2004), Soheil Saadat (PhD, MAE, 2003), Brad Lawrence (PhD, IE, 2002), Madison McCullough (MS, MAE, 2023), Ellis Stevens (MS, MAE, 2020), Sameer Upahdye (MS, MAE, 2020), Jay Amit Shah (MS, MAE, 2020), Satyanarayana Konala (MS, MAE, 2019), Maharshi Patel (MS, MAE, 2019), Victor Zaccardo (MS, MAE, 2016), Daniel Kakaley (MS, MAE, 2015), John Archer (MS, MAE, 2013), Casey Haigh (MS, MAE, 2013), Michael Mattson (MS, MAE, 2010), Nana Noel (MS, MAE, 2008), Jay Robb (MS, MAE, 2008), Andrew Richards (MS, BME, 2008), Paul Bachmeyer (MS, MAE, 2008), Sean Dugan (MS, MAE, 2007), Neil Milani (MS, MAE, 2006), Shaphan Jernigan (MS, MAE, 2006), Aaron Kiefer (MS, MAE, 2004), Jonathan Kuniholm (MS, MAE, 2003), Mike Blue (MS, MAE, 2003), David Hood (MS,

MAE, 2003), Michael Craft (MS, MAE, 2003), Jason Stevens (MS, MAE, 2002), F. Donald Caulfield (MS, MAE, 2002), Ravindra Dixit (MS, MAE, 2001), Vignesh Jayanth (MS, MAE, 2001), Dr. Kari Tammi (Post-Doc, MAE, 2008), Dr. Bei Lu (Post-Doc, MAE, 2005), Dr. Soheil Saadat (Post-Doc, MAE, 2004), Prof. Byeong-Mook Chung (Visiting Scholar, MAE, 2006), Hiba Alrukh (Visiting Scholar, MAE, 2015), Chunqi Wang (Visiting Scholar, MAE, 2013), Bo Ning (Visiting Scholar, MAE, 2012), Shiquan Wang (Visiting Scholar, MAE, 2011), Katarzyna Cieślak (Visiting Scholar, MAE, 2010).

SYNERGISTIC ACTIVITIES

Innovative Tools and Techniques for Robot Assisted Cardiac Surgery (NIH, 2004-2007)
PI of large scale, multi-university concurrent design project to develop endoscopic tools for minimally-invasive cardiac surgery; with professors Cormier (Industrial and Systems Engineering) and Laffitte (College of Design) at NCSU, surgeons Chitwood and Nifong of ECU, surgeon Bolotin of Academic Hospital Maastricht, surgeon Cook of Univ. of British Columbia

Faculty Affiliate, Institute for Maintenance Science and Technology (NCSU, 2008-2010)
DOD and affiliate-funded research with faculty and graduate students from Materials Science and Engineering, Industrial and Systems Engineering, MAE and other departments

ENTREPRENEURIAL ACTIVITIES

Founder and CEO, emTECH LLC, Raleigh NC, 2012-2014

Chief Science Officer, Physcient Inc., Durham NC, 2007-2014

Co-founder, Compu-Crane Inc., Graham NC, 1994-2003

PATENTS AND LICENSING AGREEMENTS

M.S. Islam, I. Husain, R. Chattopadhyay, G.D. Buckner, “Three-Dimensional Airgap Electric Machines Employing Winding Embedded Liquid Cooling”, U.S. Patent Number 12,184,123.

G.D. Buckner, T. Fang, “Fuel injection device for an internal combustion engine, and associated method”, U.S. Patent Number 9,316,189.

G.D. Buckner, A.S. Veeramani, S.B. Owen, S.R. Jernigan, “Active Catheter Device and Associated System and Method”, U.S. Patent Number 9,308,350.

G. Bolotin, G.D. Buckner, “Force-Determining Retraction Device and Associated Method”, U.S. Patent Number 8,579,806.

J.L. Wordsworth, J. Barnes, G.D. Buckner, “Intelligent Power Management System”, U.S. Patent Number 8,295,950.

G. Bolotin and G.D. Buckner, “Force-Determining Retraction Device and Associated Method”, U.S. Patent Number 7,775,974.

Acutus Medical: exclusive license agreement for Active Catheter Device and Associated System and Method, via NCSU’s Office of Technology Transfer, 2012.

PhyScient, Inc.: exclusive license agreement for Force-determining retraction device and associated method, 2007.

RECENT PEER-REVIEWED JOURNAL PUBLICATIONS (STUDENT CO-AUTHORS UNDERLINED)

- (78) P. Chen, S. R. Jernigan, K. Zhao, G. Varghese, M. Saha, C. Kim, A. Arzani, G. D. Buckner, J. Hu “Image-guided embolization using Ta@Ca-Alg microspheres with optimized mechanical performance,” Biomater Sci. 2025 Jul 21. doi: 10.1039/d5bm00797f. PMID: 40686479.
- (77) N. T. Kantu, W. Gao, N. Srinivasan, G. D. Buckner and H. Su, "Portable and Versatile Catheter Robot for Image-Guided Cardiovascular Interventions," IEEE/ASME Transactions on Mechatronics, (2025) doi: 10.1109/TMECH.2025.3559911.
- (76) J.J. McCall, D. Kamper, G.D. Buckner, “Soft pneumatic actuators for pushing fingers into extension”, Journal of NeuroEngineering and Rehabilitation, (2024) 21:146, <https://doi.org/10.1186/s12984-024-01444-4>.
- (75) S.R. Miller, S.R. Jernigan, R.J. Abraham, G.D. Buckner, “Comparing deposition characteristics of various embolic particles using an in vitro prostate microvasculature model”, Journal of Vascular and Interventional Radiology, 2024 Jul; <https://doi.org/10.1016/j.jvir.2024.06.028/>.
- (74) M.D. McCullough, M. Muller, T.M. Egan, G.D. Buckner, “Design Optimization and Tradeoff Analysis of an Actuated Continuum Probe for Pulmonary Nodule Localization and Resection”, Bioengineering 2024, 11, 417. <https://doi.org/10.3390/bioengineering11050417>.

RECENT PEER-REVIEWED CONFERENCE PUBLICATIONS (STUDENT CO-AUTHORS UNDERLINED)

- (47) M. McCullough, M. Muller, T. Egan, G. D. Buckner, “Design Optimization of an Actuated Probe for Pulmonary Nodule Localization and Resection”, 3rd International Conference on Biomedical Engineering and Instrumentation (BEI-2023), Boston, MA, 2023.
- (46) S. Upadhye, C. Shah, M. Liu, G. Buckner, H. Huang, “A Powered Prosthetic Ankle Designed for Task Variability - a Concept Validation”, 2021 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Prague, CZ, 2021.

- (45) S. Atay, M. Bryant, G.D. Buckner “Real-Time Power Optimization of a Bi-Modal Rolling-Flying Vehicle via Extremum Seeking Control”, 2020 American Control Conference (ACC), Denver, CO, USA, 2020
- (44) S. Miller and G.D. Buckner, "Finite element-based modeling and nonlinear control of a large air gap magnetic levitator", Proceedings of the ASME 2018 Dynamic Systems and Control Conference (DSCC2018), Atlanta, GA, USA, 2018.
- (43) B. Malinga, S. Ferguson, G.D. Buckner, “Design Optimization and Analysis of a Prescribed Vibration System”, 2016 ASME IDETC/CIE Design Automation Conference, Charlotte, NC, USA 2016.