

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CARRIER FIRE & SECURITY AMERICAS CORPORATION,
Petitioner,

v.

SENTRILOCK, LLC,
Patent Owner.

IPR2021-00665
Patent 8,606,589 B2

Before RYAN H. FLAX, BRENT M. DOUGAL, and
ALYSSA A. FINAMORE *Administrative Patent Judges*.

FLAX, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a); 37 C.F.R. § 42.73

I. INTRODUCTION

We have authority in this proceeding under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

A. BACKGROUND

SentriLock, LLC (“Patent Owner”) is the owner of U.S. Patent 8,606,589 B2 (Ex. 1001, “the ’589 patent”). Paper 4, 1. Carrier Fire & Security Americas Corporation (“Petitioner”) filed a Petition (Paper 1, “Petition” or “Pet.”) requesting *inter partes* review of the ’589 patent and challenging the patentability of claims 1–3, 6, and 10–20 thereof. Pet. 1.¹ We instituted trial on September 16, 2021. Paper 12. Patent Owner filed a Response to the Petition (Paper 18 (“Response” or “Resp.”)), to which Petitioner filed a Reply (Paper 21, “Reply”), and to which Patent Owner filed a Sur-Reply (Paper 24, “Sur-Reply”).² We have considered each of these papers and the cited evidence.

A final hearing was conducted on June 21, 2022, where the parties presented oral argument in support of their positions in this proceeding and in related IPR2021-00664 (concerning U.S. Patent 7,949,541 B2). *See* Paper 31 (“Hr’g Tr.”).

Petitioner bears the burden of proving unpatentability of the challenged claims, and the burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375,

¹ Petitioner does not challenge claims 4, 5, and 7–9. *See* Pet. 1.

² To the extent such documents are relevant, Patent Owner also initially responded to the Petition with a Preliminary Response (Paper 6), to which Petitioner responded with a Preliminary Reply (Paper 7), to which Patent Owner responded with a Preliminary Sur-Reply (Paper 10).

1378 (Fed. Cir. 2015). To prevail, Petitioner must prove unpatentability by a preponderance of the evidence. *See* 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d) (2019). Although herein we indicate that certain of Patent Owner's arguments are not persuasive, this should never be taken as an indication that we have assigned Patent Owner the burden of proof on patentability.

After considering the parties' arguments and supporting evidence, we conclude that Petitioner proves by a preponderance of the evidence that claims 1–3, 6, and 10–20 of the '589 patent are unpatentable as obvious over the asserted prior art. 35 U.S.C. § 316(e).

B. REAL PARTIES-IN-INTEREST

Petitioner identifies itself and Carrier Global Corporation as real parties-in-interest. Pet. 4. Patent Owner identifies itself as a real party-in-interest. Paper 4, 1.

C. RELATED MATTERS

Petitioner and Patent Owner state that they are parties to ongoing litigation involving the '589 patent in *SentriLock, LLC v. UTC Fire & Security Americas Corp., Inc.*, No. 1:20-cv-00520, in the United States District Court for the District of Delaware. Pet. 4; Paper 4, 1. Petitioner notes that UTC Fire & Security Corp., Inc. changed its name to Carrier Fire & Security Americas Corp. in September 2020. Pet. 4 n.2. The parties also list as related IPR2021-00664, which challenges U.S. Patent No. 7,949,541 B2 ("the '541 patent"). Pet. 4; Paper 4, 1. The final decisions in these two related *inter partes* review proceedings are issued concurrently.

D. THE '589 PATENT

The '589 patent issued on December 10, 2013, from U.S. Application 13/719,814, which was filed on December 19, 2012. Ex. 1001, codes (45),

(21), (22). The '589 patent states that it is a divisional of U.S. Application 13/113,806, filed on May 23, 2011, which is a continuation of U.S. Application 11/703,829, filed on February 8, 2007 (now the '541 patent of related IPR2021-00664), which is a continuation-in-part of U.S. Application 10/734,513, filed on December 12, 2003, which indicates priority to U.S. Provisional Application 60/319,773, filed on December 12, 2002. *Id.* at 1:6–13.

The '589 patent is directed to “[s]ystems and methods . . . for maintaining security and data gathering for a number of vehicles.” Ex. 1001, Abstract. In its Background section, the '589 patent explains that car dealerships face challenges in tracking and maintaining security in their vehicles, while also making the vehicles accessible to sales personnel when needed. *Id.* at 1:23–40. Existing systems provided a key storage device mounted on the vehicle window and a second device for transmitting identifying information to a computer inside the dealership, but the '589 patent reports that such systems required frequent servicing due to the battery drain from the communication scheme. *Id.* at 1:41–56, 2:1–9. In addition, the patent identifies a need for a system that quickly and reliably locates particular automobiles on the lot. *Id.* at 2:17–19.

Figure 2 of the '589 patent is reproduced below:

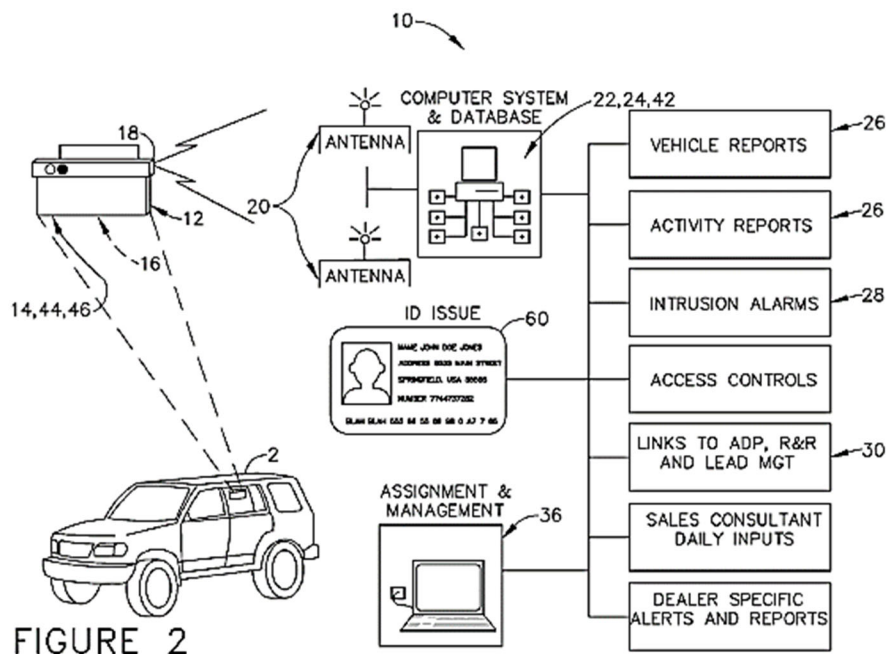


Figure 2 is “a diagram of the basic physical architecture” of vehicle activity monitoring system 10. *Id.* at 6:45–46, 7:18–20. In system 10, vehicle activity modules (VAM) 12 are mounted on vehicles 2. *Id.* at 7:20–22. “VAM 12 includes a lock box or key container 14 including key sets 16 and a transmitter or wireless link 18 which relays various information to one or more antennae 20 connected to a central computer 22 containing a database 24.” *Id.* at 7:24–28.

The '589 patent describes the system's operation as follows:

[W]ith the reading of a valid ID card 60, the ID 60 is validated in the PC database 24 in the dealership, through the wireless link 18. This validation process typically would take a few seconds. Once the validation is received, the key container 46 is released so that the sales consultant or other users can remove the key 16 for access to the vehicle 2. In a sales event 4, the interested customer will be given immediate access to the vehicle 2. If the customer decides to test drive the vehicle 2,

the sales consultant would simply check the customer[']s driver[']s license and then take customer off of the lot in the vehicle. When the vehicle 2 exits the lot, the wireless system 18 records that this vehicle is now absent but is still in an open sales event. The VAM 12 then records this as a demo drive attributed to the respective sales consultant, and records the elapsed time the vehicle 2 is out off the lot[.] Upon completion of any sales event 4, the key 16 will be replaced in the VAM 12 and the key container 46 closed. All the relevant data is added to the sales event for subsequent management follow-up and sales reporting.

Id. at 8:48–67.

The '589 patent concludes with 20 claims, of which claims 1 and 14 are independent claims. *See* Ex. 1001, 21:26–23:11. As noted above, Petitioner challenges claims 1–3, 6, and 10–20. Pet. 1. Claim 1 is illustrative of the challenged claims and is reproduced below, along with bracketed labels as added by Petitioner (*see, e.g.*, Pet. 31–37; Ex. 1002 ¶ 39) for convenient reference:

1. [1.0] A system for maintaining security and gathering data involving a plurality of remote locations comprising:

[1.1] a plurality of activity modules, each of which are assigned to one of a plurality of remote locations, at least one of said plurality of activity modules including a storage device capable of receiving and storing data, a wireless transmitter, at least one sensor, a releasable key container configured to receive at least one key, and a processor operably coupled to: (i) said wireless transmitter, (ii) said at least one sensor, and (iii) said releasable key container;

[1.2] a computer having a database for storage of data, said computer being in wireless to communication with said at least one of said plurality of activity modules; and

[1.3] at least one key identification device for attachment to said at least one key of at least one of said plurality of remote locations;

[1.4] wherein: (a) said processor is capable of receiving and transmitting event information to at least one of said storage device and said computer from said at least one sensor; and [1.5] (b) said processor is programmed to access and analyze said event information and compare said event information to reference information stored in said storage device for initiation of an event action within said at least one activity module.

Ex. 1001, 21:27–51. Challenged claims 2, 3, 6, and 10–13 depend directly or indirectly from independent claim 1. *Id.* at 21:52–22:22. Independent claim 14 is similar to claim 1, but is a method claim directed to steps of providing the components of the system recited by claim 1, and also receiving event information at the processor, transmitting data of the event information to the computer, accessing/analyzing that data and comparing (using the processor) it to reference information in the activity module’s storage device (memory). *Id.* at 22:23–51. Claims 15–20 depend directly or indirectly from claim 14. *Id.* at 22:52–23:11.

E. ASSERTED GROUNDS

Petitioner contends that the challenged claims would have been unpatentable based on the following grounds:

Grounds	Claims Challenged	35 U.S.C. § ³	References/Basis
A	1–3, 6, 10–20	103(a)	Mosgrove, ⁴ Harold ⁵
B	1–3, 6, 10–20	103(a)	Kniffin, ⁶ Maloney ⁷

³ The relevant sections of the America Invents Act (“AIA”), Pub. L. No. 112–29, took effect on March 16, 2013. The application that issued as the ’589 patent was filed December 19, 2012. *See* Ex. 1001, code (22). We apply the pre-AIA version of § 103. *See* 35 U.S.C. § 100(i). Our decision, however, is not dependent on which version of the statute is applied.

⁴ US 7,123,127 B2, issued Oct. 17, 2006 (Ex. 1011, “Mosgrove”).

⁵ US 6,472,973 B1, issued Oct. 29, 2002 (Ex. 1012, “Harold”).

⁶ US 6,072,402, issued June 6, 2000 (Ex. 1021, “Kniffin”).

⁷ US 5,801,628, issued Sept. 1, 1998 (Ex. 1022, “Maloney”).

Pet. 28. In support of its proposed grounds, Petitioner relies, *inter alia*, on the Declaration of Timothy N. Comerford. *See* Ex. 1002. Patent Owner relies, *inter alia*, on the Declaration of Arthur J. Helmicki, Ph.D. *See* Ex. 2015. We find both witnesses are qualified to offer testimony on the knowledge and perspective of the person of ordinary skill in the art as of the invention. *See* Ex. 1002 ¶¶ 7–12, 17–19 (discussing Mr. Comerford’s experience and subject matter considered); Ex. 1003; Ex. 2015 ¶¶ 8–14, 17–21 (discussing Dr. Helmicki’s experience and subject matter considered); Ex. 2016.

We review Petitioner’s challenges and Patent Owner’s arguments below.⁸

II. DISCUSSION

A. LEVEL OF ORDINARY SKILL IN THE ART

Petitioner proposes that a person of ordinary skill in the art has “at least a Bachelor’s degree [in] Electronics, Electrical, or Mechanical Engineering or related discipline, [and/]or at least three years of experience

⁸ Patent Owner argues in its Response that Petitioner’s witness, Mr. Comerford, lacks credibility, improperly implies claim constructions, does not take the level of ordinary skill into account, relies on improper hindsight, and is biased in favor of Petitioner because of employment history, and, hence, we should give his testimony “no weight.” *See* Resp. 6–16. We do not agree with Patent Owner’s positions. The evidence shows that Mr. Comerford is qualified to testify on the issues in this proceeding, and we find his opinions are based on his understanding of the perspective of the ordinarily skilled artisan, his experience, the ordinary meaning of claim terms, and the disclosures of the prior art, are supported by evidence, and do not rely on the ’589 patent as a roadmap so as to infect his opinions with improper hindsight. *See generally* Ex. 1002; Ex. 1028; Ex. 1029.

working with access control devices.”⁹ Pet. 11 (citing Ex. 1002 ¶ 19). Such a person of ordinary skill in the art could have both this level of education and experience without straying from Petitioner’s definition. Patent Owner neither contests Petitioner’s proposed definition of the ordinarily skilled artisan nor proposes an alternative. *See generally* Resp. Patent Owner’s witness, however, expressly adopts Petitioner’s definition. Ex. 2015 ¶ 20. We likewise adopt Petitioner’s proposed definition of the level of ordinary skill in the art and apply it here.

B. CLAIM CONSTRUCTION

“In an *inter partes* review proceeding, a claim of a patent . . . shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b) (2020). That standard “includ[es] construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” *Id.*; *see also Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

Petitioner states that “[f]or purposes of this IPR, Petitioner does not believe any claim term requires a construction in order to resolve if the Challenged Claims are unpatentable.” Pet. 24. Patent Owner indicates it agrees with Petitioner “that the terms of the Challenged Claims should be understood as written.” *See* Resp. 4–5.

⁹ We understand Petitioner’s proposed definition of the ordinarily skilled artisan to be inclusive regarding education and experience because such is reflected in Mr. Comerford’s cited testimony. *See* Ex. 1002 ¶ 19 (“I am such a person” and identifying his education and experience).

We agree with the parties and determine that no claim term requires express construction. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (holding that only claim terms that are in controversy need to be construed and “only to the extent necessary to resolve the controversy”); *see also Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (applying *Vivid Techs.* in the context of an *inter partes* review).

C. LEGAL STANDARDS

“In an IPR, the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). As we have already noted, this burden of persuasion never shifts to Patent Owner. *See Dynamic Drinkware*, 800 F.3d at 1378.

Regarding obviousness, the Supreme Court, in *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398 (2007), reaffirmed the framework for determining obviousness set forth in *Graham v. John Deere Co.*, 383 U.S. 1 (1966). The *KSR* Court summarized the four factual inquiries set forth in *Graham* (383 U.S. at 17–18) that are applied in determining whether a claim is unpatentable as obvious under 35 U.S.C. § 103(a) as follows:

(1) determining the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims at issue; (3) resolving the

level of ordinary skill in the art;¹⁰ and (4) considering objective evidence indicating obviousness or non-obviousness.¹¹ *KSR*, 550 U.S. at 406.

“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* at 416. “[W]hen the question is whether a patent claiming the combination of elements of prior art is obvious,” the answer depends on “whether the improvement is more than the predictable use of prior art elements according to their established functions.” *Id.* at 417. The Supreme Court stated, “any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements [of the prior art] in the manner claimed.” *Id.* at 420.

With these standards in mind, and in view of the definition of the ordinary skilled artisan and claim interpretation discussed above, we address Petitioner’s challenges below.

D. THE ’589 PATENT AND PRIORITY

There is a dispute as to what date the claims of the ’589 patent should be accorded priority. As noted above, the ’589 patent has an actual filing date of December 19, 2012, and states that it is related to several preceding applications, including U.S. Application 10/734,513 (issued as U.S. Patent 7,340,400 B2 (*see* Ex. 1006, “the ’400 patent”), filed December 12, 2003, and ultimately U.S. Provisional Application 60/319,773 (*see* Ex. 1005, “the ’773 provisional”), filed December 12, 2002. Ex. 1001, codes (60), (63), 1:5–10. The effective filing date to be accorded the challenged claims

¹⁰ There is no dispute as to the definition of the person of ordinary skill in the art. *See supra* Section II.A.

¹¹ There is no argument or evidence pertaining to objective indicia of non-obviousness. *See generally* Resp.

matters here because it determines whether the Mosgrove reference is prior art. *See* Ex. 1011, code (22) (filing date of Jan. 31, 2003). Unless the '589 patent is entitled to priority to the '773 provisional, Mosgrove is prior art. *See, e.g.,* Hr'g Tr. 34:19–35:4 (Patent Owner agreeing that priority to the '773 provisions is determinative).

Petitioner argues that the challenged claims are not entitled to any priority date earlier than the February 8, 2007, filing date of the '541 patent (of which the '589 patent is a continuation), because neither the '400 patent's nor the '773 provisional's disclosures support the claims' requirement for the activity module processor to access and analyze event information and compare the event information to reference information stored in a storage device for initiation of an event action within the activity module. Pet. 12–13 (citing, *inter alia*, Ex. 1005; Ex. 1006). Petitioner also argues that the challenged claims all require a key identification device attached to a key, which transmits information, and that, unlike the '400 patent, which discloses such a component as an RFID tag, the '773 provisional does not disclose such a component. *Id.* at 14 (citing Ex. 1005; Ex. 1006).

Patent Owner argues, however, that the claims are entitled to the December 12, 2002, filing date of the '773 provisional. Resp. 17–32. Most relevant, in response to Petitioner's position about the claimed *key identification device* attached to the vehicle key, Patent Owner argues this claimed component is described in the '400 patent as the aforementioned RFID tag (*see, e.g.,* Ex. 1006, Fig. 5 (element 74)), and is described in the '773 provisional because it discloses that “replacing the key” in the VAM

key container is *sensed* and some “aspect” of the system acts as the key identification device (*see, e.g.*, Ex. 1005, ¶¶ 2–4, Fig. 5). *Id.* at 26–30.

“In order to gain the benefit of the filing date of an earlier application under 35 U.S.C. § 120, each application in the chain leading back to the earlier application must comply with the written description requirement of 35 U.S.C. § 112.” *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1571 (Fed. Cir. 1997); *see also* 35 U.S.C. § 119(e)(1) (benefit of provisional application’s filing date requires disclosure of claimed invention “in the manner provided by the first paragraph of section 112”); *Dynamic Drinkware*, 800 F.3d at 1381–82 (“A reference patent is only entitled to claim the benefit of the filing date of its provisional application if the disclosure of the provisional application provides support for the claims in the reference patent in compliance with § 112, ¶ 1.”). “Entitlement to a filing date does not extend to subject matter which is not disclosed, but would be obvious over what is expressly disclosed. It extends only to that which is disclosed.” *Lockwood*, 107 F.3d at 1571–72.

We agree with Petitioner that the ’773 provisional does not describe the *key identification device* required by the claims so as to satisfy § 112. Such a component is described by the ’400 patent as the RFID tag. *See* Ex. 1006, Fig. 5 (element 74). The ’773 provisional, on the other hand, describes nothing that could be considered the claimed key identification device “for attachment to [the] at least one key” as recited by claims 1 and 14. Ex. 1001, 21:41–43, 22:38–40. Nothing in the ’773 provisional hints that *anything*, be it a tag or generic device, is attached to its otherwise disclosed key; therefore, we cannot agree with Patent Owner’s arguments. *See generally* Ex. 1005. The ’773 provisional merely indicates that a key

can be contained in, removed from, and replaced in a key container module that can somehow sense the key's presence, but provides no description as to how this sensing is accomplished, and certainly does not describe that anything attached to the key allows this sensing. *Id.* ¶ 4.

In view of the above-discussed findings, we conclude that the challenged claims are not entitled to priority to the '773 provisional. Other than the *key identification device* claim element discussed above, we do not address whether any other claim elements are supported by prior applications nor need we for the purposes of rendering our decision herein. No further analysis here is required because, without the '773 provisional for priority, each of Petitioner's asserted references is prior art to the challenged claims.

E. REVIEW OF ASSERTED PRIOR ART

1. *Mosgrove*

Mosgrove issued as U.S. Patent 7,123,127 B2 on October 17, 2006, from U.S. Application 10/356,655, which was filed January 31, 2003. Ex. 1011, codes (45), (21), (22). Mosgrove is prior art to the challenged claims. *See supra* Section II.D (addressing priority).

Mosgrove relates to “managing and tracking physical assets, such as, e.g., keys or other objects, that are secured at remote locations but must be accessed and used by different authorized people for various purposes.”

Ex. 1011, 1:7–10. Mosgrove explains:

Effective key management requires that a number of individual keys can be securely stored when not in use, but one or more of the keys can be made available to an authorized user in an efficient manner. Enhanced capabilities of key management systems would include tracking of keys that are in use or missing, as well as the ability to generate reports about activity

relating to access of the keys and/or the locked areas unlocked by the keys.

Id. at 1:15–22. Figure 1 of Mosgrove is reproduced below:

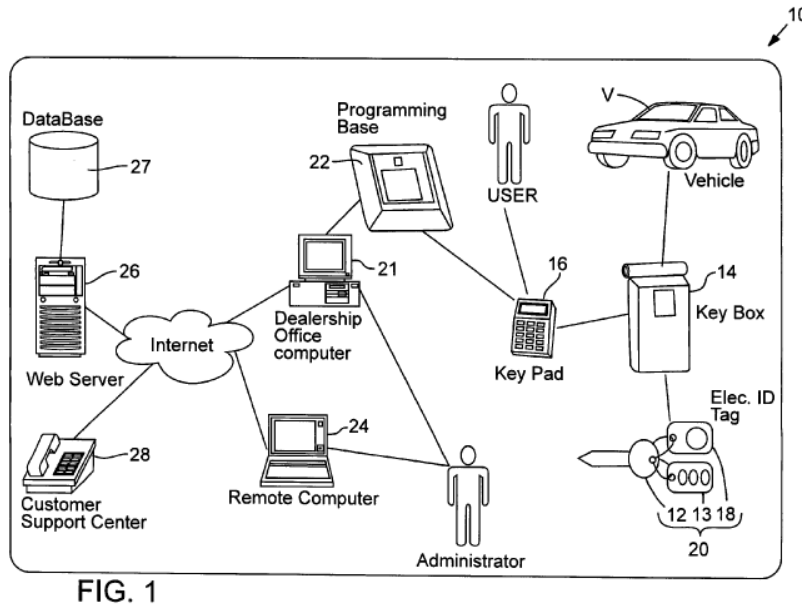


Figure 1 is a schematic diagram of a key management system for a car dealership. *Id.* at 3:55–56. The figure shows system 10, in which vehicle key 12 is secured at vehicle V in key container 14 that is locked with an electronic lock (i.e., the key container is a lock box). *Id.* at 4:36–40. A user unlocks key container 14 by linking a pre-programmed electronic access device, such as key pad 16, and demonstrating that the user is authorized to access key container 14. *Id.* at 4:48–62. If access is authorized, “key container 14 is unlocked and information about the access is recorded in memory, which may include a memory in the key pad 16 and/or a memory in the key container 14.” *Id.* at 4:63–67. Central computer 21 administers system 10, including assigning privileges to classes of users, updating inventory information, tracking activity of key pads 16 and vehicles V, and allowing users to generate reports. *Id.* at 5:4–9.

Key tag 18 is attached to vehicle key 12 and has an electronically stored identifier. *Id.* at 5:35–37. “When the system 10 is initially configured to include the vehicle V in inventory, unique identification information about that vehicle (e.g., the vehicle’s VIN) is recorded in the database associated with the central computer 21 to correlate the vehicle V with the identifier of the assigned key tag 18.” *Id.* at 5:37–42.

Mosgrove’s Figure 11A is reproduced below:

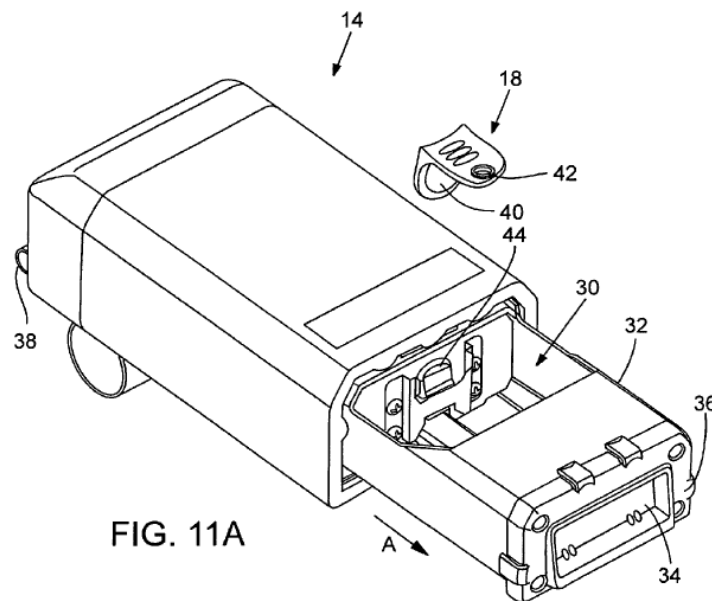


Figure 11A is a perspective view of key container 14 in an unlocked, open position. *Id.* at 4:8–10.

The key container 14 has a key set storage area 30 capable of accommodating the key set 20, which as shown in FIG. 1 may include one or more vehicle keys 12, the key tag 18 and its attachment, and, in some cases, the conventional electronic key fob 13 (or ‘remote’) provided with the vehicle keys 12.

Id. at 11:60–65. Key tag 18 has identifier element 40 that can be read electronically and eyelet 42 to allow key tag 18 to be attached to vehicle key 12. *Id.* at 12:33–35. When key tag receiving portion 44 in key set storage

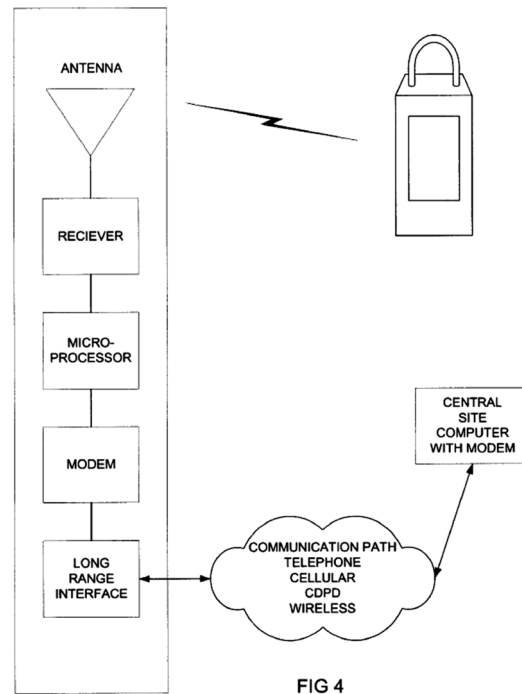
portion 30 receives key tag 18, identifier element 40 completes a circuit in key container 14. *Id.* at 12:46–50. This allows key container 14 to detect the presence of key set 20. *Id.* at 12:44–46. “The key container 14 can be configured to allow it to be locked only when the key set 20 is present in the key container 14.” *Id.* at 12:54–56.

Mosgrove discloses that, “[i]n some implementations, and possibly if infrared, RF or other wireless communications capability between the access device [(the key pad 16)] and the key container 14 is provided, there may be a dedicated power source for the key container circuit.” *Id.* at 12:15–18.

2. *Harold*

Harold issued as U.S. Patent 6,472,973 B1 on October 29, 2002, from U.S. Application 09/253,261, which was filed February 19, 1999. Ex. 1012, codes (45), (21), (22). There is no dispute that Harold is prior art. *See generally* Resp.; *see supra* Section II.D (addressing priority).

Harold summarizes that its “invention is the addition of a wireless radio link to a real estate lock box to transfer the data obtained from the access keypad to a nearby receiver which sends the data to a central site computer and compiles the data for dissemination.” Ex. 1012, Abstract. Harold illustrates such a communication system at, for example, its Figure 4, which is reproduced below:



Harold states that “FIG. 4 is a schematic view of the enhanced lock box, the receiver unit and the central computer site,” and shows “a ‘radio receiver telephone’ with a dialing modem under the control of a microprocessor,” where the radio receiver includes an antenna, a receiver, a microprocessor, a modem and a long range interface, and wirelessly connects a lock box to a central site computer via a wireless communication path, which may provide two-way communication. *Id.* at 3:44–45, 6:58–7:16.

Harold explains that realtors use lock boxes having electronic keys that allow access to the house key inside of the lock box. *Id.* at 1:50–55. The “lock box stores certain data, such as the number of the electronic key, [and] the time and date of entry. This information can later be downloaded at a central terminal Unfortunately, there is no easy method of instantly obtaining this data that is very valuable.” *Id.* at 1:56–62. Harold describes adding a wireless radio link to a lock box to transfer the data from the key

pad to a nearby receiver, which then sends the data to a central site computer. *Id.* at 2:25–29. The “primary benefit” of Harold’s invention is that it allows the information to be accessed in a timelier manner, when it may influence a seller’s or buyer’s decisions on the sale of the property. *Id.* at 2:55–62.

Harold states that, upon verifying access codes entered at a key pad, a central site computer can transmit directly to a pager in the lock box and command it to release the key, and stolen or lost keys can be disabled from unwanted intrusions in real-time. *Id.* at 3:17–19, 5:19–26.

3. *Kniffin*

Kniffin issued as U.S. Patent 6,072,402 on June 6, 2000, from U.S. Application 07/891,345, which was filed on January 9, 1992. There is no dispute that Kniffin is prior art. *See generally* Resp.; *see supra* Section II.D (addressing priority).

Kniffin summarizes its invention as follows:

A secure entry system makes use of radio transmissions to communicate with locks, keys, and related components throughout the system. The radio transmissions can be made using a paging system, a cellular telephone system, or any other RF carrier. Some embodiments employ a cellular telephone in lieu of an electronic key. Others integrate a paging receiver within an electronic key to provide a unit with dual functionality. The system is illustrated with reference to exemplary applications in the industrial site security, real estate lockbox, and transportation fields.

Ex. 1021, Abstract. Kniffin’s Figure 1 illustrates an embodiment of such a system and is reproduced below:

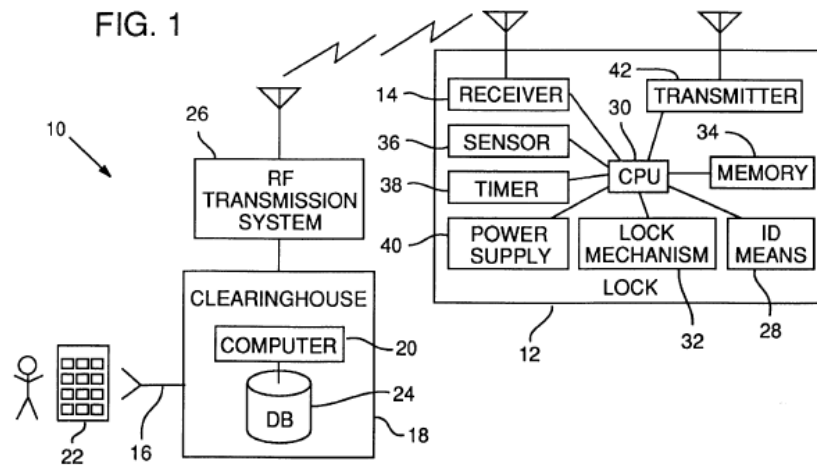


Figure 1 illustrates a secure entry system including lock 12 with receiver 14 integrated therein. *Id.* at 2:25–28. “The lock may be a door lock at an industrial site, a real estate lockbox, or any other kind of access control device.” *Id.* at 2:28–30. A user seeking access to the lock communicates to clearinghouse 18 the identity of the lock to which access is desired. *Id.* at 2:31–42. By referring to database 24, clearinghouse 18 determines whether the user should be authorized to access the lock and if so, transmits a message to lock 12 authorizing access by the user for a predetermined time period. *Id.* at 2:44–53. When the user arrives at the door, the user identifies himself to the lock using identification means 28, which can include a key pad into which the user enters a PIN, a proximity detector that remotely senses the user’s identification tag, or some other physiological sensor such as a fingerprint sensor. *Id.* at 3:50–63. “In response to [the] identification of the authorized user at the lock within the prescribed time period, a lock microprocessor CPU 30 instructs a lock mechanism 32 to unlock.” *Id.* at 3:64–66. Memory 34 logs data relating to access, and lock 12 can also report lock access to the central station. *Id.* at 4:3–5, 4:52–65.

Kniffin describes its security system in a variety of ways. The security lock may itself be in communication with a remote clearinghouse that relays a signal for the lock to unlock and grant access. *Id.* at 2:25–31. Alternatively, the locked device may be a real estate lock box in communication with the remote clearinghouse that relays a signal to open the lock box. *Id.* The locked device may also be a door that's operation can be electronically controlled by signals from the remote clearinghouse. *Id.* The clearinghouse includes computer 20, database 24, and radio transmitter. *Id.* at 2:32–3:20. User access logs are compiled at database 24 and at the lock itself. *Id.*

4. *Maloney*

Maloney issued as U.S. Patent 5,801,628 on September 1, 1998, from U.S. Application 708,617, which was filed on September 5, 1996. Ex. 1022, codes (45), (21), (22). There is no dispute that Maloney is prior art. *See generally* Resp.; *see supra* Section II.D (addressing priority).

Maloney describes a system to control and track an inventory of objects, e.g., keys. Ex. 1022, codes (54), (57), Figs. 7–8. Maloney summarizes its invention as follows:

An inventorable-object control and tracking system comprising . . . an object identification assembly having an electronic device, with a unique electronically-readable identification code, which is connected to an inventorable-object to enable control over access to the object and tracking of the object to identify a user in possession of the object. . . . In accordance with the preferred apparatus, the system additionally comprises a storage unit having a drawer which is withdrawable from an enclosure upon operation of an electronically-actuated locking mechanism. The storage unit includes a slot and electrical connector positioned in a drawer face plate assembly for receipt of a personal identification assembly which enables a user to

gain access to the plurality of object identification assemblies
residing in the storage unit.

Id. at Abstract.

Maloney describes that manual methods of restricting access and control over valuable objects, such as car keys, are known, but that such methods are ineffective and subject to abuse. *Id.* at 1:39–2:25. Maloney seeks to provide “an inventory control and tracking system which couples an electronic device, having a unique identification code, to an inventoriable-object and interfaces the device to a remote controller . . . to enable periodic, consistent, and accurate identification of the object’s presence or absence.”

Id. at 3:3–10.

Maloney’s Figures 7 and 8 are reproduced below:

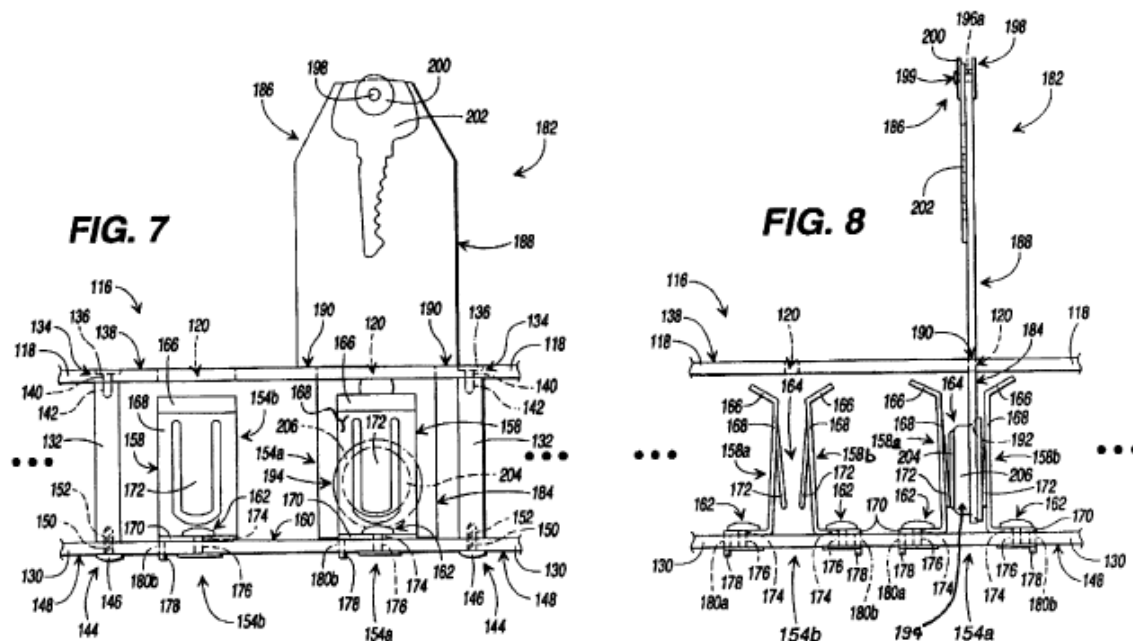


Figure 7 is a partial, right side view of an assembly retaining structure, and Figure 8 is a partial, front view of the same structure. *Id.* at 9:1–4. As shown in these figures, connector 154a receives object identification

assembly 182, which includes inventorable-object 202 and interface member 183. *Id.* at 13:1–6. In the embodiment shown in the figures, inventorable-object 202 is a key. *Id.* at 13:27–28. Tongue portion 184 of interface member 183 defines hole 192, which receives and secures electronic device 194. *Id.* at 13:20–21, Fig. 12. Electronic device 194 has positive and negative data contacts 204, 206, which are electrically engaged by contacts 158a,b of connector 154. *Id.* at 13:33–36. “[E]lectronic device 194 includes a memory which permanently stores a unique identification code. Upon connection of an inventorable object 202 to an interface member 183, the identification code in the electronic device 194 is associated with the inventorable object 202.” *Id.* at 13:37–42.

In operation, when object identification assembly 182 is present in connector 154, the unique identification code of electronic device 194 is communicated by a local controller to a remote controller, which stores the identification code and location of object identification assembly 182 for subsequent review. *Id.* at 24:64–25:4. In this way, the system can monitor the presence or absence of inventorable objects, e.g., keys, in each connector based on whether electronic device 194 is detected. *Id.* at 24:52–25:11. Maloney also teaches that such an inventory system can be housed within a container and a drawer that is slidably received within the container. *Id.* at 8:61–63, 9:48–51, 11:22–50, 19:16–30, Figs. 4, 30.

F. OBVIOUSNESS BASED ON MOSGROVE AND HAROLD (GROUND A)

Petitioner contends that claims 1–3, 6, and 10–20 would have been obvious over Mosgrove in view of Harold. Pet. 28–47. Patent Owner disputes this contention. Resp. 16–17, 32–42. After considering the parties’ arguments and the evidence of record, we determine that Petitioner proves

by a preponderance of the evidence that these claims would have been obvious, as asserted. We explain below.

Petitioner relies on Mosgrove as teaching most of the limitations of the claims. *See* Pet. 28–47. As to independent claims 1 and 14, Petitioner asserts that Mosgrove’s key containers and associated memory correspond to the claimed “activity modules including a storage device” (*id.* at 31), Mosgrove’s key tag receiving portion 44 corresponds to the claimed “sensor” (*id.*), Mosgrove’s movable portion 32 corresponds to the claimed “releasable key container” (*id.* at 33), Mosgrove’s microprocessor-based circuit corresponds to the claimed “processor” (*id.* at 33, 35–37), Mosgrove’s central computer corresponds to the claimed “computer having a database” (*id.* at 33–34), and Mosgrove’s key tag 18 corresponds to the claimed “key identification device” (*id.* at 35). *See id.* (citing, *inter alia*, 1002 ¶¶ 36–37, 42–43, 45–51, 53–55, 58, 60–61, 63–64, 84–85, 87–93, 95–97, 99). Regarding the added limitations of claim 14 that differ from the system elements of claim 1, Petitioner relies on Mosgrove as teaching them. *Id.* at 42–46 (citing, *inter alia*, Ex. 1002 ¶¶ 101–102, 104–105). According to Petitioner, Harold serves a backup role in the event that Mosgrove does not disclose that a computer is in wireless communication with a key container. *Id.* at 34–35 (citing, *inter alia*, Ex. 1002 ¶¶ 55–56). Petitioner asserts that “Harold describes known advantages of providing wireless communications between a central computer and a lockbox such as for verification of the user, disabling stolen or lost keypads, and providing real-time data of activity.” *Id.* at 30, 34–35 (citing Ex. 1002 ¶¶ 38, 55–56; Ex. 1012, 2:25–28, 3:54–56, 4:21–26, 4:30–33, 4:48–55, 5:19–26, 7:17–34).

According to Petitioner, ordinarily skilled artisans would have been motivated to modify Mosgrove’s system to provide that the computer is in wireless communication with a key container “in order to streamline the upload of the information obtained from the key container for real time analysis.” *Id.* at 30–35 (citing Ex. 1002 ¶¶ 38, 56). Petitioner asserts that, like Mosgrove, Harold discloses lock boxes for storing keys. *Id.* at 34 (citing Ex. 1012, 2:25–28, 4:48–55, 6:16–22). According to Petitioner, “Harold describes known advantages of providing wireless communications between a central computer and a lockbox such as for verification of the user, disabling stolen or lost keypads, and providing real-time data of activity.” *Id.* at 35 (citing Ex. 1002 ¶ 56; Ex. 1012, 2:25–28; 5:19–26).

Patent Owner contests that there was motivation to combine this prior art with a reasonable expectation of success, absent improper hindsight.¹² Resp. 16–17, 32–40. Patent Owner argues that Harold issued years before Mosgrove was filed yet Mosgrove did not incorporate Harold’s teachings, which evidences that it would not have been obvious to make that art combination and that Petitioner offers no contemporaneous evidence to the contrary. *Id.* at 33–34 (citing Ex. 2015 ¶¶ 83–86; Ex. 1011; Ex. 1012). Patent Owner argues that Petitioner’s “real-time analysis” rationale could only have come from the teachings of the ’589 patent itself. *Id.* at 34–35 (citing Ex. 2015 ¶¶ 87–88). Patent Owner also challenges whether Mr. Comerford (Petitioner’s witness) properly analyzed obviousness based on these references, pointing to an exchange during his deposition where he

¹² Patent Owner also argues that Mosgrove is not prior art because the challenged claims are entitled to priority to the ’773 provisional; however, this is an unpersuasive argument for the reasons set forth above. *See supra* Section II.D.

seemed to agree that his opinions were “based on the people doing the work on the invention of the ’541 Patent.” *Id.* at 35–38 (citing Ex. 2017, 179:14–182:6). Patent Owner also argues that, because it would have required “significant engineering” to add Harold’s “complex two-hop or intermediate transmitter network” into Mosgrove’s system, the ordinarily skilled artisan would not have had a reasonable expectation of success. *Id.* at 38–40 (citing Ex. 2015 ¶¶ 89–92).

Having considered the parties positions on combining the prior art and the evidence, we agree with Petitioner that the ordinarily skilled artisan would have had reasons to modify Mosgrove in view of Harold and would have had a reasonable expectation of success. Petitioner, supported by Mr. Comerford’s testimony, establishes that one reason to modify Mosgrove’s systems in view of Harold was that lock boxes that communicate directly with central computers would have streamlined the wireless communications between Mosgrove’s vehicle key lock boxes and their associated central computer. *See* Pet. 28–30, 33–35; Ex. 1002 ¶¶ 36–38, 56.

We read Mosgrove to expressly disclose that its key containers (i.e., lock boxes) have a wireless communication system and functionality: a “wireless communication capability between the access device [(e.g., a key pad)] and the key container.” *See* Ex. 1011, 12:15–18. As disclosed by Mosgrove, its system includes communication between its key containers and associated access devices (key pads) and communication between the access devices and a central computer; thus, in Mosgrove’s specified system the access device (key pad) is a communications-intermediary between the key containers (lock boxes) and a computer. *Id.* at 4:35–5:47, Fig. 1.

Petitioner's proposed modification to Mosgrove would point the key containers' already existing wireless communications systems toward the central computer for information exchange, without requiring the intermediary key pad. *See, e.g.,* Hr'g Tr. 25:7–26:3 (Petitioner confirming our understanding of its position on this issue).

“[W]hen a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result.” *KSR*, 550 U.S. at 416. This is the case here where Mosgrove's wireless communication system exists already and is merely redirected. “[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *Id.* at 417. Further, “any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements [of the prior art] in the manner claimed.” *Id.* at 420. This is the case here where the techniques of Harold illuminate an advantage to be had using Mosgrove's existing system (or a slightly modified Mosgrove system).

We find a reason existed to combine and modify the prior art: efficiency and streamlining. *See Dystar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1368 (Fed. Cir. 2006) (making things stronger, cheaper, cleaner, faster, lighter, smaller, more durable, or more efficient are universal motivators to combine/modify prior art). And, as Mosgrove's disclosed key containers *have* wireless communication capability, simply specifying that the communications will

be between the key container and the computer rather than between the key container and keypad is no technological leap. It would have required only the use of known components and techniques to yield predictable results, and we find there would have been a reasonable expectation for success. *See* Ex. 1002 ¶ 79; *KSR*, 550 U.S. at 417 (to be nonobvious, an improvement must more than the predictable use of prior art elements according to their established functions).

We address Patent Owner’s arguments, which we find unpersuasive, below.

Regarding Patent Owner’s argument that Mosgrove should have referenced Harold’s teachings of lock box-to-computer communications if this element were obvious, we are not persuaded. “[E]vidence of a motivation to combine need *not* be found in the prior art references themselves, but rather may be found in ‘the knowledge of one of ordinary skill in the art or, in some cases, from the nature of the problem to be solved.’ . . . When not from the prior art references, the ‘evidence’ of motive will likely consist of an *explanation* of the well-known principle or problem-solving strategy to be applied.” *Dystar*, 464 F.3d at 1366 (emphases in original, quoting *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999)).

Regarding Patent Owner’s allegations of the improper use of hindsight in asserting the modification/combination of prior art, we are not persuaded. “Any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made and does not include knowledge

gleaned only from applicant's disclosure, such a reconstruction is proper.” *In re McLaughlin*, 443 F.2d 1392, 1395 (CCPA 1971). Here, Petitioner has identified subject matter from prior art without reliance on the teachings of the '589 patent, i.e., Mosgrove teaches wireless communications in a vehicle key lock box and Harold says it would be useful to have such a lock box wirelessly communicate with a central computer, and we find no improper hindsight in this position. We do not find the fact that Patent Owner extracted *a comment* from Mr. Comerford that he based an opinion “on the people doing the work on the invention of the '541 patent,” to be representative of the testimony in his Declaration (Ex. 1002) or persuasive on this issue.

Regarding Patent Owner's argument that combining Harold's technology with Mosgrove's systems would have been too complex for the ordinarily skilled artisan, we do not find that this is what Petitioner proposes.

There is a distinction between trying to physically combine the two separate apparatus disclosed in two prior art references on the one hand, and on the other hand trying to learn enough from the disclosures of the two references to render obvious the claims in suit. . . . Claims may be obvious in view of a combination of references, even if the features of one reference cannot be substituted physically into the structure of the other reference.

Orthopedic Equip. Co. v. United States, 702 F.2d 1005, 1013 (Fed. Cir. 1983). We do not find that Petitioner proposes physically combining Harold's apparatus with Mosgrove's, but merely proposes slightly modifying Mosgrove's system to be more like Harold's in terms of where wireless communications are transmitted.

The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference,” *In re Keller*, 642 F.2d 413,

425 (CCPA 1981)[], [*s*]ee also *In re Mouttet*, 686 F.3d 1322, 1332 (Fed. Cir. 2012) (citing *In re Keller*, 642 F.2d at 425), but rather whether “a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention,” *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1361 (Fed. Cir. 2007).

Allied Erecting & Dismantling Co., Inc. v. Genesis Attachments, LLC, 825 F.3d 1373, 1381 (Fed. Cir. 2016). Here, we find the ordinarily skilled artisan would have been motivated to modify Mosgrove as Petitioner proposes. Thus, Patent Owner’s argument is not persuasive.

Having concluded that Petitioner has sufficiently shown the ordinarily skilled artisan would have combined the teachings of Mosgrove and Harold (and modified Mosgrove) with a reasonable expectation of success, we turn to the elements of the claims and the parties’ positions on whether they would have been obvious over the prior art.

1. Analysis of Independent Claim 1

Under Ground A of the Petition, Petitioner sets forth an element-by-element explanation as to how the Mosgrove-Harold combination would have rendered claim 1 obvious, which we review below along with Patent Owner’s respective arguments in opposition, if any.

[1.0] A system for maintaining security and gathering data involving a plurality of remote locations comprising

Petitioner asserts the subject matter of the preamble is taught by Mosgrove in disclosing a system for storing vehicle keys securely at respective vehicles using key containers that allow authorized users to access held keys using an access device (e.g., key pad) and a PIN, where the container gathers and stores data, such as an access log including users, and date and time of access. Pet. 31 (citing Ex. 1002 ¶¶ 42–43; Ex. 1011, 2:40–

54, 2:61–63, 3:20–30, 4:38–40, 4:63–67, 5:52–64, 6:49–7:20, 11:59–65, Figs. 1, 11A–11D).

Patent Owner does not argue that the Mosgrove-Harold prior art combination fails to teach this subject matter. *See generally* Resp.; *In re NuVasive, Inc.*, 841 F.3d 966, 974 (Fed. Cir. 2016) (holding that the Board is not required to address undisputed matters).

We note, the preamble includes the open and inclusive transitional term “comprising,” which means the claim can include additional steps or elements not expressly recited. *CIAS, Inc. v. Alliance Gaming Corp.*, 504 F.3d 1356, 1360 (Fed. Cir. 2007) (“In the patent claim context, the term ‘comprising’ is well understood to mean ‘including but not limited to.’”). “Generally, the preamble does not limit the claims.” *Allen Eng’g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1346 (Fed. Cir. 2002). Regardless of whether the preamble is limiting, Petitioner shows that the recitation in the preamble is satisfied by the prior art combination because Mosgrove is directed to “[a] key management system for controlling access to vehicle keys,” teaches that such keys are “secured,” and discloses collection and communication of data in this system. *See, e.g.*, Ex. 1011, Abstract, 1:6–10, 4:35–5:47, Figs. 1–10, 12; *see also* Ex. 1002 ¶¶ 42–43.

[1.1] a plurality of activity modules, each of which are assigned to one of a plurality of remote locations, at least one of said plurality of activity modules including a storage device capable of receiving and storing data, a wireless transmitter, at least one sensor, a releasable key container configured to receive at least one key, and a processor operably coupled to: (i) said wireless

*transmitter, (ii) said at least one sensor, and (iii) said
releasable key container*

Addressing this clause of claim 1, Petitioner asserts it would have been obvious because Mosgrove discloses key containers assigned to and mounted on vehicles at, e.g., a car dealership, where each container has a memory for receiving/storing data, a wireless transmitter, a sensor in a key tag receiving portion and a key pad, a portion to receive a key, and a microprocessor for controlling the container's functions. Pet. 31–33 (citing Ex. 1002 ¶¶ 45–51; Ex. 1011, 1:63–64; 2:40–45; 2:61–67; 3:21–26, 3:28–30; 5:52–64, 6:49–50, 6:58–64, 11:49–57, 11:66–12:2, 12:8–12, 12:15–18, 12:44–52, Figs. 4, 11A–11C).

Patent Owner does not argue that the Mosgrove-Harold prior art combination fails to teach this subject matter. *See generally* Resp.; *In re NuVasive*, 841 F.3d at 974 (holding the Board is not required to address undisputed matters).

We agree with Petitioner that Mosgrove teaches this claimed subject matter and adopt Petitioner's rationale as our own. For example, we agree that Mosgrove's key containers 14 disclose the claimed *vehicle activity modules*, that they have a memory capable of receiving and storing data, also have a wireless transmitter that can communicate with a key pad, have at least one sensor in a circuit for detecting the presence of a key, have a releasable key container configured to receive at least one key in the form of a key storage area, and have a processor operably coupled to one or more of the wireless transmitter, at least one sensor, or releasable key container, which controls the locking and unlocking of the container based on sensed input, such as whether a key is present or whether a user has approved

access. *See* Ex. 1011, 2:38–3:50, 4:35–5:46, 11:35–12:61; *see also* Ex. 1002 ¶¶ 45–51.

*[1.2] a computer having a database for storage of data,
said computer being in wireless to communication with
said at least one of said plurality of activity modules*

Petitioner asserts the subject matter of this portion of independent claim 1 is taught by Mosgrove in its disclosure of a central computer and associated database for tracking activity of access devices, users, and vehicles. Pet. 33–34 (citing Ex. 1002 ¶¶ 53–54; Ex. 1011, 3:31–38, 5:16–22, 11:49–57). Petitioner acknowledges that Mosgrove’s key container is not directly in wireless communication with the computer, but asserts that having such a direct wireless communication would have been obvious to the ordinarily skilled artisan to streamline Mosgrove’s system by having its key containers communicate with the computer rather than via an intermediary device (the key pad) and that, as of the invention date, it was well-known for computers to have wireless communication capabilities. *Id.* at 34 (citing Ex. 1002 ¶ 55; Ex. 1011, 10:44–11:33).

Petitioner asserts that the teachings of Harold support that this modification to Mosgrove’s system would have been obvious because Harold discloses a wireless radio link between a lock box and a receiver and a central computer used to transfer data therebetween, e.g., lock box access information, in real-time, which Petitioner asserts would have improved Mosgrove’s system. *Id.* at 34–35 (citing Ex. 1002 ¶¶ 38, 56; Ex. 1012, 2:25–28, 4:30–33, 4:48–55, 5:19–26, 6:16–22, 7:17–34, 8:13–20).

We have addressed Patent Owner’s arguments concerning the combination of Mosgrove and Harold, and Mosgrove’s modification, above. Patent Owner also argues that the “proposed combination of Mosgrove in

view of Harold fails to disclose every limitation of the invention recited in the claims.” Resp. 40–42. As part of this argument, Patent Owner contends that Petitioner’s position relies on Mosgrove’s key container and key pad being considered a single unit, but further argues that these two things are not a single unit. *Id.* (citing Ex. 2015 ¶¶ 93–95).

We agree with Petitioner that Mosgrove teaches the claimed computer, i.e., a “central computer 21 . . . linked to a database that stores information for administering the key management system.” *See, e.g.*, Ex. 1011, 5:10–22; *see also* Ex. 1002 ¶ 53. We agree with Petitioner’s position that it would have been obvious to modify Mosgrove to direct its wireless communications to be between the Mosgrove key container and the Mosgrove central computer, rather than to require the Mosgrove key pad as an intermediary, which is suggested by Harold in its teaching that wireless communication between a remote key lock box and a central computer is useful. *See* Ex. 1002 ¶¶ 53–56; *see also* Ex. 1012, Abstract, 2:25–3:31, 4:48–55, 5:19–26.

Upon modifying Mosgrove’s key container’s wireless communication system so that it communicated with Mosgrove’s central computer, whether or not Mosgrove’s key pad and key container can or should be considered a single unit, as argued by Patent Owner, becomes a moot point. At the hearing, we asked the parties to explain the significance, if any, of the Mosgrove key container and keypad being a single unit, as argued by Patent Owner, and neither party did so. *See* Hr’g Tr. 27:9–28:25, 55:11–60:21.

[1.3] at least one key identification device for attachment to said at least one key of at least one of said plurality of remote locations

Petitioner asserts that Mosgrove teaches this subject matter of independent claim 1 because the reference discloses a key tag with an identifier. Pet. 35 (citing Ex. 1002 ¶ 58; Ex. 1011, 2:40–45, 2:57–67, 5:35–47, 8:64–9:2, Fig. 1).

Patent Owner does not argue that the Mosgrove-Harold prior art combination fails to teach this subject matter. *See generally* Resp.; *In re NuVasive*, 841 F.3d at 974 (holding that the Board is not required to address undisputed matters).

Petitioner has explained how Mosgrove teaches the claimed key identification device, and we adopt Petitioner’s uncontradicted rationale as findings of fact.

[1.4] wherein: (a) said processor is capable of receiving and transmitting event information to at least one of said storage device and said computer from said at least one sensor

Petitioner asserts that Mosgrove’s key container’s processor is disclosed to receive and transmit information, e.g., access information, to the device from one of its sensors, such as a user’s access request input at the key pad 14, or information from the key tag to the receiving portion indicating its presence. Pet. 35–36 (citing Ex. 1002 ¶¶ 60–61; Ex. 1011, 4:48–5:3, 7:9–13, 12:8–14).

Patent Owner does not argue that the Mosgrove-Harold prior art combination fails to teach this subject matter. *See generally* Resp.; *In re NuVasive*, 841 F.3d at 974 (holding that the Board is not required to address undisputed matters).

Petitioner has explained how Mosgrove teaches the claimed processor, and we adopt Petitioner's uncontradicted rationale as findings of fact. We agree with Petitioner's uncontested position that Mosgrove's microprocessor discloses the claimed microprocessor. *See* Ex. 1002 ¶¶ 60–61.

[1.5] (b) said processor is programmed to access and analyze said event information and compare said event information to reference information stored in said storage device for initiation of an event action within said at least one activity module

Petitioner asserts that Mosgrove teaches this subject matter because the reference's key container's processor validates a user's identity based on input from the key pad (event information) and controls the unlocking of the key container. Pet. 36–37 (citing Ex. 1011 2:50–52, 3:17–18, 6:49–50, 12:8–11). Petitioner asserts that an ordinarily skilled artisan would have understood that this process relies on reference information stored in the lock box, such as authorized users and their PIN codes, and that Mosgrove discloses that the processor must compare user input to authorized user information stored in the key container's memory in order to unlock the key container. *Id.* (citing Ex. 1002 ¶¶ 63–64; Ex. 1011, 3:25–27, 3:63–4:7, 4:14–18, 4:63–5:3, 6:66–7:3, 12:8–11).

Patent Owner does not argue that the Mosgrove-Harold prior art combination fails to teach this subject matter. *See generally* Resp.; *In re NuVasive*, 841 F.3d at 974 (holding that the Board is not required to address undisputed matters).

Petitioner has explained how Mosgrove teaches the claimed processor's programming, and we adopt Petitioner's uncontradicted rationale as findings of fact. We agree with Petitioner's uncontested

position that Mosgrove's microprocessor is programmed to operate in the fashion claimed. *See* Ex. 1002 ¶¶ 63–64.

2. *Analysis of Dependent Claims 2, 3, 6, and 10–13*

Each of claims 2, 3, 6, and 10–13 depends, directly or indirectly, from independent claim 1. Ex. 1001, 21:52–23:22. Petitioner provides a detailed discussion mapping the cited references to each limitation of these dependent claims. *See* Pet. 37–42. Patent Owner does not present any argument on these claims beyond or different than those discussed above in connection with claim 1. *See* Resp. 16–42; *see In re NuVasive*, 841 F.3d at 974 (holding that the Board is not required to address undisputed matters). As noted above, claims 4, 5, and 7–9 are not challenged in this proceeding. We address Petitioner's assertions and evidence below.

Claim 2 depends directly from independent claim 1 and further requires “(a) *said at least one sensor senses a presence or an absence of said at least one key identification device within said releasable key container; and (b) said at least one activity module transmits information relating to said presence or absence of said at least one key identification device.*” Ex. 1001, 21:52–57 (italics added). Petitioner asserts that Mosgrove's key tag receiving portion senses the presence or absence of the key identification device and records this event information into the memory, which an ordinarily skilled artisan would have understood involves transmitting the information to the key pad, and that such an ordinarily skilled artisan would have found it obvious to transmit the information to the central computer as part of tracking activities for the same reasons asserted for combining Mosgrove and Harold concerning claim 1. Pet. 37–38 (citing Ex. 1002 ¶¶ 66–67, Ex. 1011, 2:61–67, 4:63–5:11, 7:7–13, 12:44–52). We

agree with Petitioner's unopposed position and adopt Petitioner's rationale on obviousness as our findings of fact.

Claim 3 depends directly from independent claim 1 and further requires "*said event action is selected from at least one of: (a) triggering an alarm; (b) releasing said releasable key container; and (c) transmitting said event information to said computer.*" Ex. 1001, 21:58–61 (italics added). Petitioner asserts that this subject matter would have been obvious because Mosgrove teaches an event of releasing (unlocking) the key container if a user is authorized. Pet. 39 (citing Ex. 1002 ¶ 69; Ex. 1011, 4:63–67, 11:60–12:2, 12:8–14, Fig. 11A). We agree with Petitioner's unopposed position and adopt Petitioner's rationale on obviousness as our findings of fact.

Claim 6 depends directly from independent claim 1 and further requires "*said at least one sensor comprises a programmable key pad.*" Ex. 1001, 21:66–67 (italics added). Petitioner asserts that this subject matter would have been obvious because Mosgrove teaches a programmable key pad. Pet. 39 (citing Ex. 1002 ¶ 71; Ex. 1011, 3:1–20, 4:48–62, 6:45–50). We agree with Petitioner's unopposed position and adopt Petitioner's rationale on obviousness as our findings of fact.

Claim 10 depends directly from independent claim 1 and further requires "*said at least one activity module further comprises a clock, and said at least one activity module transmits information related to said clock.*" Ex. 1001, 22:9–11 (italics added). Petitioner asserts that this subject matter would have been obvious because Mosgrove teaches its key containers record date and time of access in their memory, which would have been understood to include a clock. Pet. 40 (citing Ex. 1002 ¶ 73; Ex. 1011, 3:20–27, 6:2–9, 7:9–13). We agree with Petitioner's unopposed

position and adopt Petitioner's rationale on obviousness as our findings of fact.

Claim 11 depends directly from independent claim 1 and further requires "*said event information is transmitted to said computer for storage in said database, and for generation of reports relating to said event information.*" Ex. 1001, 22:12–16 (italics added). Petitioner asserts this subject matter would have been obvious because Mosgrove teaches event information is transmitted to a computer for storage in a database, specifically access information including timing of access, and also the generation of reports on such activity that would include time frame, user information, and usage codes. Pet. 40–41 (citing Ex. 1002 ¶ 75; Ex. 1011, 3:31–38, 4:63–5:9, 5:16–22, 7:7–17, 10:44–11:34). We agree with Petitioner's unopposed position and adopt Petitioner's rationale on obviousness as our findings of fact.

Claim 12 depends from claim 11 and thereby from independent claim 1 and further requires "*said computer generates reports relating to a presence or an absence of at least one of said keys based on said event information.*" Ex. 1001, 22:17–19 (italics added). Petitioner asserts this subject matter would have been obvious because Mosgrove teaches an "audit trail" relating to access of key containers, including user identification, user codes, timing of access, and key tag identification, and also the generating of an inventory report, which provides information relating to the presence or absence of a key in a container as a status. Pet. 41–42 (citing Ex. 1002 ¶¶ 77–78; Ex. 1011, 2:57–64, 10:44–58, 11:23–25, 12:44–50). We agree with Petitioner's unopposed position and adopt Petitioner's rationale on obviousness as our findings of fact.

Claim 13 depends from claim 11 and thereby from independent claim 1 and further requires “*said computer generates reports relating to attempts to access at least one of said plurality of key compartments.*” Ex. 1001, 22:20–22 (italics added). Petitioner asserts that this subject matter would have been obvious because Mosgrove teaches its computer can generate a report of activity for all users, or some subset thereof, that would include key pad assignments, vehicles accessed, and timing thereof. Pet. 42 (citing Ex. 1002 ¶ 80; Ex. 1011, 10:52–58, 11:5–34). Petitioner asserts that the inclusion of access attempts in such reports would have been obvious to track unauthorized tries and theft of equipment. *Id.* We agree with Petitioner’s unopposed position and adopt Petitioner’s rationale on obviousness as our findings of fact.

3. *Independent Claim 14*

Independent claim 14 is a method claim that recites many limitations similar to system claim 1. Ex. 1001, 22:23–51. Petitioner’s motivation-to-combine positions for claim 14 are the same as for claim 1. *See* Pet. 29–30. As with claim 1, Petitioner provides a detailed explanation mapping the cited references to the limitations of claim 14, referring at times back to its arguments regarding similar limitations in claim 1 where the evidence overlaps. *See id.* at 42–46. Patent Owner presents no argument over claim 14 beyond or different from those discussed above in connection with claim 1. *See* Prelim. Resp. 38–41. Patent Owner’s arguments are unpersuasive as to claim 14 for the reasons above.

We address below Petitioner’s assertions on how Mosgrove and Harold render each step of claim 14 obvious. We will not revisit the propriety of combining Mosgrove and Harold, or any argument from Patent Owner over claim limitations, already addressed above.

14. [14.0] A method for maintaining security and gathering data involving a plurality of remote locations, said method comprising

Petitioner asserts that the preamble of claim 14 is so similar to that of claim 1 (i.e., 1.0), that the same evidence supports that it would have been obvious over Mosgrove and Harold. Pet. 42–43 (citing Ex. 1002 ¶¶ 84–85); *see supra* Section II.F.1 (addressing claim 1). We agree with Petitioner’s unopposed position and adopt Petitioner’s rationale on obviousness as our findings of fact.

[14.1] providing a plurality of activity modules, each of which are assigned to one of a plurality of remote locations, at least one of said plurality of activity modules including a storage device capable of receiving and storing data, a wireless transmitter, at least one sensor, a releasable key container configured to receive at least one key, and a processor operably coupled to (i) said wireless transmitter, (ii) said at least one sensor, and (iii) said releasable key container

Petitioner asserts that this recited step of claim 14 is so similar to clause 1.1 of claim 1 that the same evidence supports that it would have been obvious over Mosgrove and Harold. Pet. 43 (citing Ex. 1002 ¶¶ 87–93); *see supra* Section II.F.1 (addressing claim 1). We agree with Petitioner’s unopposed position and adopt Petitioner’s rationale on obviousness as our findings of fact.

[14.2] providing a computer having a database for storage of data, said computer being in wireless communication with said at least one of said plurality of activity modules

Petitioner asserts that this recited step of claim 14 is so similar to clause 1.2 of claim 1 that the same evidence supports that it would have been obvious over Mosgrove and Harold. Pet. 43 (citing Ex. 1002 ¶¶ 95–97); *see*

supra Section II.F.1 (addressing claim 1). We agree with Petitioner’s unopposed position and adopt Petitioner’s rationale on obviousness as our findings of fact.

[14.3] providing at least one key identification device for attachment to said at least one key of at least one of said plurality of remote locations

Petitioner asserts that this recited step of claim 14 is so similar to clause 1.3 of claim 1 that the same evidence supports that it would have been obvious over Mosgrove and Harold. Pet. 43 (citing Ex. 1002 ¶ 99); *see supra* Section II.F.1 (addressing claim 1). We agree with Petitioner’s unopposed position and adopt Petitioner’s rationale on obviousness as our findings of fact.

[14.4] receiving, at said processor, event information from said at least one sensor; transmitting data representative of said event information to at least one of (i) said storage device, and (ii) said computer

Petitioner asserts that this step of claim 14 would have been obvious because Mosgrove discloses its key containers’ processors receive event information (e.g., access information) from sensors (e.g., key pad), including user PIN, and that such data is stored in the key container memory. Pet. 44 (citing Ex. 1011, 4:48–5:3, 12:8–14). Petitioner further asserts that Mosgrove’s system records an “audit trail” using this information, e.g., user identification, usage code, date/time or access, key tag identification, and that this information is transmitted to the memory and is ultimately transmitted to the central computer for management and tracking purposes. *Id.* at 44–45 (citing Ex. 1002 ¶¶ 101–102; Ex. 1011, 4:63–5:3, 7:9–13). We agree with Petitioner’s unopposed position and adopt Petitioner’s rationale on obviousness as our findings of fact.

[14.5] accessing and analyzing said data representative of said event information, by said processor; comparing, by said processor, said data representative of said event information to reference information stored in said storage device, for initiation of an event action within said at least one activity module

Petitioner asserts that this step would have been obvious because Mosgrove discloses that, to gain access to a key container, a user validates their identity by entering a PIN at a key pad (event information), and that an ordinarily skilled artisan would understand that the key containers use such user information to provide access to the lock box with reference to a lockout list (reference information) stored in the device's memory. Pet. 45 (citing Ex. 1002 ¶¶ 104–105; Ex. 1011, 2:50–52, 3:17–18, 3:25–27, 3:63–4:7, 4:14–18, 4:63–5:3, 6:49–50, 6:66–7:3). We agree with Petitioner's unopposed position and adopt Petitioner's rationale on obviousness as our findings of fact.

4. Analysis of Dependent Claims 15–20

Each of claims 15–20 depends, directly or indirectly, from independent claim 14. Ex. 1001, 22:52–23:11. Petitioner provides a detailed discussion mapping the cited references to each limitation of these dependent claims. See Pet. 46–47. Patent Owner does not present any argument on these claims beyond or different than those discussed above in connection with claim 1. See Resp. 16–42; see *In re NuVasive*, 841 F.3d at 974 (holding that the Board is not required to address undisputed matters). We address Petitioner's assertions and evidence below.

Claim 15 depends directly from independent claim 14 and further requires “(a) sensing, by said at least one sensor, a presence or an absence of said at least one key identification device within said releasable key

container” and “(b) transmitting, using said at least one activity module, information relating to said presence or absence of said at least one key identification device.” Ex. 1001, 22:52–59 (italics added). Petitioner asserts that this subject matter is so similar to that of claim 2 that the same evidence supports that it would have been obvious over Mosgrove and Harold. Pet. 46 (citing Ex. 1002 ¶¶ 107–108); *see supra* Section II.F.2 (addressing claim 2). We agree with Petitioner’s unopposed position and adopt Petitioner’s rationale on obviousness as our findings of fact.

Claim 16 depends directly from independent claim 14 and further requires “*selecting said event action from at least one of: (a) triggering an alarm, (b) releasing said releasable key container, and (c) transmitting said event information to said computer.*” Ex. 1001, 22:60–63 (italics added). Petitioner asserts that this subject matter is so similar to that of claim 3 that the same evidence supports that it would have been obvious over Mosgrove and Harold. Pet. 46 (citing Ex. 1002 ¶ 110); *see supra* Section II.F.2 (addressing claim 3). We agree with Petitioner’s unopposed position and adopt Petitioner’s rationale on obviousness as our findings of fact.

Claim 17 depends directly from independent claim 14 and further requires “*said at least one sensor comprises at least one of: (a) an intrusion sensor; (b) an RFID reader; (c) a programmable key pad; and (d) a biometric reader.*” Ex. 1001, 22:64–67 (italics added). Petitioner asserts that this subject matter is so similar to that of claim 6 that the same evidence supports that it would have been obvious over Mosgrove and Harold. Pet. 47 (citing Ex. 1002 ¶ 112); *see supra* Section II.F.2 (addressing claim 6). We agree with Petitioner’s unopposed position and adopt Petitioner’s rationale on obviousness as our findings of fact.

Claim 18 depends directly from independent claim 14 and further requires “(a) *transmitting said event information to said computer for storage in said database; and (b) generating reports relating to said event information.*” Ex. 1001, 23:1–4 (italics added). Petitioner asserts that this subject matter is so similar to that of claim 11 that the same evidence supports that it would have been obvious over Mosgrove and Harold. Pet. 47 (citing Ex. 1002 ¶¶ 114–115); *see supra* Section II.F.2 (addressing claim 11). We agree with Petitioner’s unopposed position and adopt Petitioner’s rationale on obviousness as our findings of fact.

Claim 19 depends from claim 18 and thereby from independent claim 14 and further requires “*said step of generating reports comprises: generating reports relating to a presence or an absence of at least one of said keys based on said event information.*” Ex. 1001, 23:5–8 (italics added). Petitioner asserts that this subject matter is so similar to that of claim 12 that the same evidence supports that it would have been obvious over Mosgrove and Harold. Pet. 47 (citing Ex. 1002 ¶¶ 117–118); *see supra* Section II.F.2 (addressing claim 12). We agree with Petitioner’s unopposed position and adopt Petitioner’s rationale on obviousness as our findings of fact.

Claim 20 depends from claim 18 and thereby from independent claim 14 and further requires “*said step of generating reports comprises: generating reports relating to attempts to access at least one of said plurality of key compartments.*” Ex. 1001, 23: 9–11 (italics added). Petitioner asserts that this subject matter is so similar to that of claim 13 that the same evidence supports that it would have been obvious over Mosgrove and Harold. Pet. 47 (citing Ex. 1002 ¶ 120); *see supra* Section II.F.2

(addressing claim 13). We agree with Petitioner's unopposed position and adopt Petitioner's rationale on obviousness as our findings of fact.

5. *Summary of Ground A*

Petitioner establishes by a preponderance of the evidence that claims 1–3, 6, and 10–20 of the '589 patent would have been obvious over Mosgrove and Harold, as discussed above. No argument by Patent Owner or evidence of record persuades us otherwise.

G. OBVIOUSNESS BASED ON KNIFFIN AND MALONEY (GROUND B)

Under the Petition's Ground B, Petitioner contends that claims 1–3, 6, and 10–20 would have been obvious over Kniffin in view of Maloney. Pet. 48–68. Patent Owner disputes this. Resp. 42–47. After considering the parties' arguments and the evidence of record, we determine that Petitioner proves by a preponderance of the evidence that these claims would have been obvious, as asserted. We explain below.

Petitioner begins by introducing the references (we have done the same above—*see supra* Sections II.E.3 and II.E.4) and asserts that the ordinarily skilled artisan would have had reasons to combine the references, as well as to modify Kniffin in view of Maloney. *See* Pet. 48–51. Petitioner asserts that Kniffin teaches most of the elements or steps of the independent claims. For example, Petitioner points to Kniffin's disclosure of a secure entry system, which can include a lock box having a wireless communication system (receiver and transmitter) for communicating with a central computer (of a clearinghouse), and also discloses that a user accesses the lock box via authorization based on their identity, which can include entering a PIN at a key pad or remotely sensing an identification tag or some biometric ID. *Id.* at 48–49 (citing Ex. 1002 ¶ 121; Ex. 1021, 2:25–30, 2:50–63, 3:50–4:5, 4:52–65, Fig. 1). Further, Petitioner asserts Kniffin discloses

that, upon authorization of a user, a microprocessor of the lock box instructs a lock mechanism to open the lock box to provide the user access to a key, and that data relating to this process is logged in memory for analysis. *Id.* at 49 (citing Ex. 1002 ¶ 122; Ex. 1021, 2:64–4:5).

Petitioner asserts that it would have been obvious to an ordinarily skilled artisan to incorporate a system for tracking the inventory of keys, as taught by Maloney, into the system of Kniffin so that Kniffin’s lock boxes could detect whether their assigned keys were present or absent, which would provide more security for Kniffin’s system. *Id.* at 49–51 (citing Ex. 1002 ¶¶ 123–126). Petitioner asserts Maloney also provides express motivation for such a combination because it discloses that “lockboxes are ‘often fraught with the potential for misuse and abuse due to the dishonesty of some individuals and the inability of the systems themselves to detect possible misuse and abuse,’” and also that “inherent problems of manual systems suggest the need for a system which automatically controls access to and tracks the use of various types of objects.” *Id.* at 50 (citing Ex. 1002 ¶¶ 124–126; Ex. 1022, 2:4–25).

Patent Owner argues that the person of ordinary skill in the art would not have been motivated to combine Kniffin and Maloney with a reasonable expectation of success. Resp. 43–45. Patent Owner’s first argument is similar to that addressed above regarding Mosgrove and Harold, i.e., that Maloney’s disclosure had been available before Kniffin’s filing, but Kniffin failed to incorporate its teachings. *Id.* at 43–44 (citing Ex. 2015 ¶ 102). Patent Owner next argues that Petitioner failed to offer a reason to combine the references, arguing that mitigating user dishonesty is insufficient and was not recognized by Kniffin, and so implicates Petitioner’s improper use

of hindsight. *Id.* at 44 (citing Ex. 2015 ¶ 103). Patent Owner again references Mr. Comerford’s deposition testimony, this time that he stated that he “first look[ed] at the claims of the ’589 Patent and then search[ed] a limited set of prior art references (handpicked by Petitioner’s attorneys) to find disclosures of the limitations within the references” and that “he determined what was obvious based on what ‘made sense.’” *Id.* (citing Ex. 2020, 41:4–24, 106:7–19).

Patent Owner also argues the ordinarily skilled artisan would not have had a reasonable expectation of success in combining Kniffin and Maloney. *Id.* at 44–45. Patent Owner’s rationale is that it would not have been so easily workable for the skilled artisan to add Maloney’s key sensor to Kniffin because Kniffin does not disclose electrical connectivity in its lock box’s key compartment nor a slot to insert an electrical device as used in Maloney. *Id.* (citing Ex. 2021 ¶ 104).

We agree with Petitioner that it would have been reasonable for the person of ordinary skill in the art to combine Kniffin and Maloney. Kniffin is directed to technology for securing and tracking possession of keys, held in a lock box, and accessible to authorized users. *See, e.g.*, Ex. 1021, Abstract, 2:25–53. Maloney is also directed to security of keys and discloses technology to track when keys have been removed from or replaced in a storage apparatus, *e.g.*, a container (drawer) at an automobile dealership. *See, e.g.*, Ex. 1022, Abstract, 1:18–58, 2:66–3:10. We agree with Petitioner and its witness, Mr. Comerford (with whose analysis of the issue we find no fault), that enhancing Kniffin’s key-security with Maloney’s key tracking sensor is a reason to modify Kniffin and would have been obvious to the ordinarily skilled artisan. *See, e.g.*, Ex. 1002 ¶¶ 124–

126; *KSR*, 550 U.S. at 416–420 (“[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill,” and “any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements [of the prior art] in the manner claimed.”).

Turning to Patent Owner’s arguments on the issue, they are unavailing. For the same reasons as set forth above regarding the Mosgrove-Harold combination, we disagree with Patent Owner’s argument that Kniffin should have addressed Maloney’s technology in order for it to have been obvious to make this prior art combination. *See supra* Section II.F (addressing the combination of Mosgrove and Harold); *Dystar*, 464 F.3d at 1366 (“[E]vidence of a motivation to combine need *not* be found in the prior art references themselves, but rather may be found in ‘the knowledge of one of ordinary skill in the art or, in some cases, from the nature of the problem to be solved.’”).

Regarding Patent Owner’s argument that the ordinarily skilled artisan would not have had a reasonable expectation of success in combining Kniffin and Maloney, we also disagree with this point. That Kniffin is not pre-wired or expressly supplied a dedicated amount of space to accept Maloney’s key sensor is not a persuasive argument. *Allied Erecting*, 825 F.3d at 1381 (The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference, but rather whether a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the

claimed invention.). As explained by Petitioner in its Reply, “electrical connections and simple interfaces, such as electrical contacts forming a slot, are routine and ordinary design processes to a POSA.” Reply 19 (citing Ex.1034 ¶ 5; Ex. 1033, 31:5–13 (Dr. Helmicki also testifying on the issue)). As also noted by Petitioner “Kniffin states that ‘[s]uch sensors [(referring to proximity detectors and biometric scanners)] can be implemented by those of ordinary skill in this art without undue experimentation.” *Id.* at 19–20 (citing Ex. 1021, 4:23–25). We agree with Petitioner’s position and do not doubt that an ordinarily skilled artisan could have implemented a key sensor like Maloney’s into Kniffin’s lock boxes similar to how Kniffin includes other sensors. The obviousness analysis “can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418, 421 (“A person of ordinary skill is also a person of ordinary creativity, not an automaton.”).

Having determined that Petitioner shows Kniffin and Maloney would have been combined by an ordinarily skilled artisan with a reasonable expectation of success, we turn to the elements of the claims.

1. Analysis of Independent Claim 1

Under Ground B of the Petition, Petitioner sets forth an element-by-element explanation as to how the Kniffin-Maloney combination would have rendered claim 1 obvious, which we review below along with Patent Owner’s respective arguments in opposition, if any.

[1.0] A system for maintaining security and gathering data involving a plurality of remote locations comprising

Petitioner asserts the subject matter of the preamble is taught by Kniffin in its disclosure of a secure entry system and method including using remote lock boxes that include RF receivers and log data on access in

memory. Pet. 51 (citing Ex. 1002 ¶ 130; Ex. 1021, 2:25–30, 3:30–31, 3:44–49, 4:1–5).

Patent Owner does not argue that the Kniffin-Maloney prior art combination fails to teach this subject matter. *See generally* Resp.; *In re NuVasive*, 841 F.3d at 974 (holding that the Board is not required to address undisputed matters).

We find Petitioner has explained how Kniffin teaches the subject matter of the preamble, and we adopt Petitioner’s uncontradicted rationale as findings of fact.

[1.1] a plurality of activity modules, each of which are assigned to one of a plurality of remote locations, at least one of said plurality of activity modules including a storage device capable of receiving and storing data, a wireless transmitter, at least one sensor, a releasable key container configured to receive at least one key, and a processor operably coupled to: (i) said wireless transmitter, (ii) said at least one sensor, and (iii) said releasable key container

Petitioner asserts that the subject matter of clause 1.1 would have been obvious because Kniffin discloses lock boxes (activity modules) assigned to remote locations (e.g., houses, real estate inventory, or vehicles), and discloses that the lock boxes include a memory (storage device for data), wireless communications transmitter and receiver, and various sensors (including a key pad). Pet. 51–53 (citing Ex. 1002 ¶¶ 132–135; Ex. 1021 2:25–30, 3:50–63, 4:1–5, 4:15–30, 4:50–54, 5:44–47, 6:54–61, Fig. 1). Regarding the recited “releasable key container configured to receive at least one key,” Petitioner asserts that Kniffin teaches that its lock boxes include a key compartment. *Id.* at 53 (citing Ex. 1002 ¶ 136 (Mr. Comerford testifying that Kniffin at 4:21–23 discloses its lock box can be equipped with

a sensor to confirm that the key compartment is actually opened and discloses at 14:44–46 that the lock box’s lock controls access to a dwelling key contained within a real estate lock box); Ex. 1021, 4:21–23, 14:44–46). Petitioner also asserts that Kniffin teaches its lock box includes a microprocessor CPU (a processor) coupled to the wireless transmitter, sensors, key pad, and releasable key container/key compartment. *Id.* at 53–54 (citing Ex. 1002 ¶¶ 137–139; Ex. 1021, 3:64–66, Fig. 1).

Patent Owner contests Petitioner’s assertions and argues Kniffin does not teach a plurality of activity modules, but only discloses a single locking device. Resp. 45–46 (citing Ex. 2015 ¶¶ 106, 108–109). Patent Owner also argues that Kniffin does not teach a “releasable key container,” but merely describes that “the real estate lockbox can hold a key in a compartment.” *Id.* at 46 (citing Ex. 2015 ¶ 110; Ex. 1021, 4:21–23, 14:44–46). On this issue, Patent Owner states that “although claim [26] of Kniffin suggests that the lock controls access to a house key, it does not describe the processor operably coupled to a releasable key container as a component of the activity module.” *Id.* at 47 (citing Ex. 2015 ¶ 111). Relatedly, Patent Owner also argues that Kniffin fails to teach a processor operably connected to a releasable key container. *Id.* at 46–47. These constitute all arguments by Patent Owner over individual limitations of claim 1 (and claim 14). *See generally id.*

We agree with Petitioner and adopt Petitioner’s rationale on these limitations as our findings of fact. We are not persuaded by Patent Owner’s arguments.

First, we agree with Petitioner and disagree with Patent Owner on whether Kniffin teaches a plurality of lock boxes. *See* Pet. 51; Resp. 46. As

an initial matter, mere duplication of parts, such as providing a plurality of lock boxes rather than one, has been uniformly held to not be patentable in and of itself. *See In re Abrahamsen*, 53 F.2d 893, 894 (CCPA 1931). In any event, Kniffin is certainly not directed to a system limited to one lock box connected to a clearinghouse to grant access to one property; to the contrary, from the first sentence of Kniffin’s Abstract (Petitioner does not cite the Abstract for this proposition, but it supports Petitioner’s positions), the reference makes clear that it is directed to a system of multiple locks, multiple keys, and related components connected to the clearinghouse. *See* Ex. 1021, Abstract (“A secure entry system makes use of radio transmissions to communicate with locks, keys, and related components throughout the system.”); *see also id.* at 2:28-30. It would make no sense for a system, which may be implemented in a real estate setting, as Kniffin discloses, to be limited to control access to only a single unit and we disagree with Patent Owner that an ordinarily skilled artisan would read the reference in such a fashion.

Second, we agree with Petitioner and disagree with Patent Owner that Kniffin fails to teach or suggest *a releasable key container configured to receive at least one key*. *See* Pet. 51–54; Resp. 46–47. Kniffin is directed to several ways of controlling access to property (houses, buildings, vehicles), including controlling lock boxes housing keys to such property. A lock box (e.g., a real estate lockbox) has a releasable key container (a “key compartment”) to receive a key. *See e.g.*, Ex. 1021, 4:21–25. Were there any doubt, claim 26 of Kniffin is expressly directed to control of a lock box that holds and provides access to a key. *Id.* at 14:44–46. Though Patent Owner acknowledges these teachings of Kniffin and asserts they are

insufficient, Patent Owner does not explain what aspect of the claim limitation is missing. *See* Resp. 46.

Third, having determined that Petitioner is correct and Kniffin teaches a lockable and releasable key container, we also agree with Petitioner and disagree with Patent Owner on the issue of whether Kniffin teaches a processor operatively coupled to a releasable key container. *See* Pet. 51–54; Resp. 47. Kniffin’s disclosed processor, e.g., CPU 30 illustrated in Figure 1, is connected to and controls the operation of every functional element of Kniffin’s remote lock box, including lock mechanism 32. *See* Ex. 1021, 3:64–4:3. When that lock mechanism is a key container holding a key, the processor is operably connected thereto to control access to that key. Ex. 1002 ¶¶ 136–139.

*[1.2] a computer having a database for storage of data,
said computer being in wireless to communication with
said at least one of said plurality of activity modules*

Petitioner asserts Kniffin teaches this limitation in disclosing a computer (element 20 of clearinghouse 18) having a database (element 24) and in wireless communication with the lock boxes. Pet. 54 (citing Ex. 1002 ¶ 141; Ex 1021, 3:13–16, 4:52–65, 6:43–53, 6:62–67, Fig. 1).

Patent Owner does not argue that the Kniffin-Maloney prior art combination fails to teach this subject matter. *See generally* Resp.; *In re NuVasive*, 841 F.3d at 974 (holding that the Board is not required to address undisputed matters).

Petitioner has explained how Kniffin teaches this claim limitation, and we adopt Petitioner’s uncontradicted rationale as findings of fact.

[1.3] at least one key identification device for attachment to said at least one key of at least one of said plurality of remote locations

Petitioner asserts that Maloney teaches this claim limitation in disclosing an assembly with an electronic device (element 194) that attaches to a key and has a unique identification code, where a system monitors or scans this device and attached key to detect its presence or absence using, for example, a computer. Pet. 54–57 (citing Ex. 1002 ¶¶ 143–145; Ex. 1022, 3:11–21, 7:37–38, 10:14–20, 13:3–45, 24:52–25:11, Figs. 7, 12, 14). Petitioner asserts that an ordinarily skilled artisan would have modified Kniffin’s lock box to have a key identification device as taught by Maloney to more securely track system keys and deter abuse or misuse. *Id.* at 47–48 (citing Ex. 1002 ¶¶ 124–126, 146–147; Ex. 1021, 4:37–51; Ex. 1022, 2:4–25).

Other than the arguments directed to motivation to combine, which we addressed above as unpersuasive, Patent Owner does not argue that the Kniffin-Maloney prior art combination fails to teach this subject matter. *See generally* Resp.; *In re NuVasive*, 841 F.3d at 974 (holding that the Board is not required to address undisputed matters).

Petitioner has explained how Kniffin, modified in view of Maloney teaches this claim limitation, and we adopt Petitioner’s uncontradicted rationale as findings of fact.

[1.4] wherein: (a) said processor is capable of receiving and transmitting event information to at least one of said storage device and said computer from said at least one sensor

Petitioner asserts this limitation is taught by Kniffin because it discloses a processor that receives data relating to access from a keypad,

proximity sensor, and physiological sensors, and communicates such data to a memory of the lock box. Pet. 58 (citing Ex. 1002 ¶ 149; Ex. 1021, 3:50–4:5, 4:52–65).

Patent Owner does not argue that the Kniffin-Maloney prior art combination fails to teach this subject matter. *See generally* Resp.; *In re NuVasive*, 841 F.3d at 974 (holding that the Board is not required to address undisputed matters).

Petitioner has explained how Kniffin teaches this claim limitation, and we adopt Petitioner’s uncontradicted rationale as findings of fact.

[1.5] (b) said processor is programmed to access and analyze said event information and compare said event information to reference information stored in said storage device for initiation of an event action within said at least one activity module

Petitioner asserts this limitation is taught by Kniffin because the reference discloses that its processor receives user identification information and, upon comparing the identity to stored reference information relating to authorized users, instructs a lock mechanism to unlock the lock box. Pet. 58–59 (citing Ex. 1002 ¶ 151; Ex. 1021, 3:50–4:5).

Patent Owner does not argue that the Kniffin-Maloney prior art combination fails to teach this subject matter. *See generally* Resp.; *In re NuVasive*, 841 F.3d at 974 (holding that the Board is not required to address undisputed matters).

Petitioner has explained how Kniffin teaches this claim limitation, and we adopt Petitioner’s uncontradicted rationale as findings of fact.

2. Analysis of Dependent Claims 2, 3, 6, and 10–13

Petitioner provides a detailed discussion mapping the cited references onto each limitation of dependent claims 2, 3, 6, and 10–13. *See* Pet. 59–64.

Patent Owner does not present any argument on these claims beyond or different than those discussed above in connection with claim 1. *See* Resp. 42–47; *see In re NuVasive*, 841 F.3d at 974 (holding that the Board is not required to address undisputed matters). We address Petitioner’s assertions and evidence below.

Regarding claim 2, Petitioner asserts that, as discussed above, incorporating Maloney’s key identification device into Kniffin’s lock boxes would have been obvious, as would thereby sensing the presence or absence of the key, and that Kniffin’s lock boxes report similar information, e.g., access information, to a central station wirelessly. Pet. 59–60 (citing Ex. 1002 ¶¶ 153–156; Ex. 1021, 4:52–65; Ex. 1022, 2:66–3:10, 4:7–11, 6:5–17, 7:37–38, 24:52–25:11, 25:59–66). Patent Owner does not argue that the Kniffin-Maloney prior art combination fails to teach this subject matter. *See generally* Resp.; *In re NuVasive*, 841 F.3d at 974 (holding that the Board is not required to address undisputed matters). Petitioner has explained how the Kniffin-Maloney combination teaches this claim limitation, and we adopt Petitioner’s uncontradicted rationale as findings of fact.

For claim 3, Petitioner asserts that Kniffin teaches that its system identifies authorized users and instructs lock mechanisms on lock boxes to unlock, and that it would have been obvious to an ordinarily skilled artisan that this unlocking releases a key container to give access to the key. Pet. 60–61 (citing Ex. 1002 ¶ 158; Ex. 1021, 3:50–4:5). Patent Owner does not argue that the Kniffin-Maloney prior art combination fails to teach this subject matter. *See generally* Resp.; *In re NuVasive*, 841 F.3d at 974 (holding that the Board is not required to address undisputed matters). Petitioner has explained how the Kniffin-Maloney combination teaches this

claim limitation, and we adopt Petitioner's uncontradicted rationale as findings of fact.

Petitioner asserts that the subject matter of Claim 6 would have been obvious because Kniffin teaches a user uses a programmable key pad to enter a PIN code. Pet. 61 (citing Ex. 1002 ¶ 160; Ex. 1021, 3:50–63). Patent Owner does not argue that the Kniffin-Maloney prior art combination fails to teach this subject matter. *See generally* Resp.; *In re NuVasive*, 841 F.3d at 974 (holding that the Board is not required to address undisputed matters). Petitioner has explained how the Kniffin-Maloney combination teaches this claim limitation, and we adopt Petitioner's uncontradicted rationale as findings of fact.

Petitioner asserts that the subject matter of claim 10 would have been obvious because Kniffin teaches a lock box has a clock (timer 38; time of access) and transmits information regarding the clock and access data. Pet. 61 (citing Ex. 1002 ¶ 162; Ex. 1021, 4:1–5, 4:36–46, 4:52–65, 8:33–36). Patent Owner does not argue that the Kniffin-Maloney prior art combination fails to teach this subject matter. *See generally* Resp.; *In re NuVasive*, 841 F.3d at 974 (holding that the Board is not required to address undisputed matters). Petitioner has explained how the Kniffin-Maloney combination teaches this claim limitation, and we adopt Petitioner's uncontradicted rationale as findings of fact.

Petitioner asserts that the subject matter of claim 11 would have been obvious because Kiffin teaches that a lock box records data on lock access, which is reported to a central computer, and that the access data is logged in memory for analysis. Pet. 62 (citing Ex. 1002 ¶164; Ex. 1021, 4:3–5, 4:52–65). Petitioner asserts that creating reports on such data for analysis would

have been obvious to an ordinarily skilled artisan as an easy way to present the information, as well as that generation of such reports was well known. *Id.* (citing Ex. 1002 ¶ 164). Patent Owner does not argue that the Kniffin-Maloney prior art combination fails to teach this subject matter. *See generally* Resp.; *In re NuVasive*, 841 F.3d at 974 (holding that the Board is not required to address undisputed matters). Petitioner has explained how the Kniffin-Maloney combination teaches this claim limitation, and we adopt Petitioner's uncontradicted rationale as findings of fact.

Petitioner asserts that the subject matter of claim 12 would have been obvious because sensing the presence or absence of keys would have been obvious over Kniffin and Maloney, and so generating reports on such data would also have been obvious. Pet. 62–63 (citing, *inter alia*, Ex. 1002 ¶ 166; Ex. 1021, 4:3–5). Other than the arguments addressed above, Patent Owner does not argue that the Kniffin-Maloney prior art combination fails to teach this subject matter. *See generally* Resp.; *In re NuVasive*, 841 F.3d at 974 (holding that the Board is not required to address undisputed matters). Petitioner has explained how the Kniffin-Maloney combination teaches this claim limitation, and we adopt Petitioner's uncontradicted rationale as findings of fact.

Regarding claim 13, Petitioner asserts that Kniffin teaches its lock boxes can record data on lock access, which is reported to a central computer and also stored in memory for analysis, and that generating a report on this information would have been obvious as a way to provide the information. Pet. 63–64 (citing Ex. 1002 ¶ 168; Ex. 1021, 4:3–5, 4:52–65). Patent Owner does not argue that the Kniffin-Maloney prior art combination fails to teach this subject matter. *See generally* Resp.; *In re NuVasive*, 841

F.3d at 974 (holding that the Board is not required to address undisputed matters). Petitioner has explained how the Kniffin-Maloney combination teaches this claim limitation, and we adopt Petitioner's uncontradicted rationale as findings of fact.

3. *Analysis of Independent Claim 14*

As noted previously, independent claim 14 is a method claim reciting many limitations similar to system claim 1. *See* Ex. 1001, 22:23–51. Under Ground B, Petitioner provides a detailed explanation mapping the disclosures of Kniffin and Maloney to the limitations of claim 14, referring at times back to its arguments regarding similar limitations found in claim 1. *See* Pet. 64–66. Petitioner's reasoning for why an ordinarily skilled artisan would have combined Kniffin and Maloney in the manner recited in claim 14 is the same as for claim 1. *See id.* at 48–51.

Patent Owner does not present any argument on claim 14 beyond or different than those discussed above in connection with claim 1. *See* Resp. 42–47. *See generally* Resp.; *In re NuVasive*, 841 F.3d at 974 (holding that the Board is not required to address undisputed matters).

We address the limitations of claim 14 below.

14. [14.0] *A method for maintaining security and gathering data involving a plurality of remote locations, said method comprising*

Petitioner asserts that the preamble of claim 14 is so similar to that of claim 1 (i.e., 1.0), that the same evidence supports that it would have been obvious over Kniffin and Maloney. Pet. 64 (citing, *inter alia*, Ex. 1002 ¶ 173); *see supra* Section II.G.1 (addressing claim 1). We agree with Petitioner's unopposed position and adopt Petitioner's rationale on obviousness as our findings of fact.

[14.1] providing a plurality of activity modules, each of which are assigned to one of a plurality of remote locations, at least one of said plurality of activity modules including a storage device capable of receiving and storing data, a wireless transmitter, at least one sensor, a releasable key container configured to receive at least one key, and a processor operably coupled to (i) said wireless transmitter, (ii) said at least one sensor, and (iii) said releasable key container

Petitioner asserts that the subject matter of this clause of claim 14 is so similar to that of claim 1 (i.e., 1.1), that the same evidence supports that it would have been obvious over Kniffin and Maloney. Pet. 64 (citing, *inter alia*, Ex. 1002 ¶¶ 175–182); *see supra* Section II.G.1 (addressing claim 1). Patent Owner does not present any arguments over this portion of claim 14 that were not presented over the respective clause 1.1 of claim 1, and our conclusions here are the same as noted above. Patent Owner’s arguments are not persuasive, and we agree with Petitioner’s position and adopt Petitioner’s rationale on obviousness as our findings of fact.

[14.2] providing a computer having a database for storage of data, said computer being in wireless communication with said at least one of said plurality of activity modules

Petitioner asserts that this clause of claim 14 is so similar to that of claim 1 (i.e., 1.2), that the same evidence supports that it would have been obvious over Kniffin and Maloney. Pet. 64 (citing, *inter alia*, Ex. 1002 ¶ 184); *see supra* Section II.G.1 (addressing claim 1). We agree with Petitioner’s unopposed position and adopt Petitioner’s rationale on obviousness as our findings of fact.

[14.3] providing at least one key identification device for attachment to said at least one key of at least one of said plurality of remote locations

Petitioner asserts that this clause of claim 14 is so similar to that of claim 1 (i.e., 1.3), that the same evidence supports that it would have been obvious over Kniffin and Maloney. Pet. 64 (citing, *inter alia*, Ex. 1002 ¶¶ 186–190); *see supra* Section II.G.1 (addressing claim 1). We agree with Petitioner’s unopposed position and adopt Petitioner’s rationale on obviousness as our findings of fact.

[14.4] receiving, at said processor, event information from said at least one sensor; transmitting data representative of said event information to at least one of (i) said storage device, and (ii) said computer

Petitioner asserts that the subject matter of this clause of claim 14 would have been obvious because Kniffin teaches its processor can receive event information (access information as a PIN) from a variety of sensors (key pad, proximity sensor, or physiological sensors providing authorization information) and transmit related data to a storage device (memory), which the lock box reports to a central computer. Pet. 45 (citing Ex. 1002 ¶ 192; Ex. 1021, 3:50–4:5, 4:52–65). Patent Owner does not argue that the Kniffin-Maloney prior art combination fails to teach this subject matter. *See generally* Resp.; *In re NuVasive*, 841 F.3d at 974 (holding that the Board is not required to address undisputed matters). Petitioner has explained how Kniffin teaches this claim limitation, and we adopt Petitioner’s uncontradicted rationale as findings of fact.

[14.5] accessing and analyzing said data representative of said event information, by said processor; comparing, by said processor, said data representative of said event information to reference information stored in said

*storage device, for initiation of an event action within
said at least one activity module*

Petitioner asserts that this subject matter would have been obvious because Kniffin discloses its processor accesses and analyzes event information (access information) and compares it to reference information (authorized users) stored as data in its memory so as to potentially instruct a lock mechanism to unlock for an authorized user. Pet. 65–66 (citing Ex. 1002 ¶ 194; Ex. 1021, 3:50–4:5). Patent Owner does not argue that the Kniffin-Maloney prior art combination fails to teach this subject matter. *See generally* Resp.; *In re NuVasive*, 841 F.3d at 974 (holding that the Board is not required to address undisputed matters). Petitioner has explained how Kniffin teaches this claim limitation, and we adopt Petitioner’s uncontradicted rationale as findings of fact.

4. *Analysis of Dependent Claims 15–20*

Petitioner provides a detailed discussion mapping the disclosures of Kniffin and Maloney onto each limitation of dependent claims 15–20. *See* Pet. 66–68; *see also id.* at 59–64 (addressing the counterpart claims depending from claim 1). Patent Owner does not present any argument on these claims beyond or different than those discussed above in connection with claim 1. *See* Resp. 16–42; *see In re NuVasive*, 841 F.3d at 974 (holding that the Board is not required to address undisputed matters). We address Petitioner’s assertions and evidence below.

Petitioner asserts that claims 15, 16, 18, 19, and 20 would have been obvious over Kniffin and Maloney for the same reasons claims 2, 3, 11, 12, and 13, respectively, would have been obvious over this prior art combination, as discussed above. Pet. 66–68 (citing, *inter alia*, Ex. 1002 ¶¶ 196–199, 201, 206, 208, 210–211); *see also supra* Section II.G.2

(addressing dependent claims 2–3, 6, and 10–13). We agree with Petitioner’s unopposed positions, and adopt Petitioner’s rationale on obviousness as our findings of fact.

For claim 17, Petitioner asserts that Kniffin discloses its sensors include a biometric reader and a programmable key pad and that the ordinarily skilled artisan would have found it obvious to use that programmable key pad to permit users to choose or change PIN codes. Pet. 67 (citing Ex. 1002 ¶¶ 203–204; Ex. 1021, 3:50–63). Patent Owner does not argue that the Kniffin-Maloney prior art combination fails to teach this subject matter. *See generally* Resp.; *In re NuVasive*, 841 F.3d at 974 (holding that the Board is not required to address undisputed matters). Petitioner has explained how Kniffin teaches this claimed subject matter, and we adopt Petitioner’s uncontradicted rationale as findings of fact.

5. *Summary of Ground B*

Petitioner establishes by a preponderance of the evidence that claims 1–3, 6, and 10–20 of the ’589 patent would have been obvious over Kniffin and Maloney, as discussed above. No argument by Patent Owner or evidence of record persuades us otherwise.

III. CONCLUSION

For the foregoing reasons, we determine that Petitioner establishes by a preponderance of the evidence that claims 1–3, 6, and 10–20 would have been obvious over Mosgrove and Harold and also over Kniffin and Maloney.¹³ Therefore, we find these claims are unpatentable.¹⁴

¹³ As noted above, claims 4, 5, and 7–9 of the ’589 patent are not challenged in this proceeding.

¹⁴ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this

Our final decision is summarized as follows:

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–3, 6, 10–20	103	Mosgrove, Harold	1–3, 6, 10–20	
1–3, 6, 10–20	103	Kniffin, Maloney	1–3, 6, 10–20	
Overall Outcome			1–3, 6, 10–20	

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that Petitioner has proved by a preponderance of the evidence that claims 1–3, 6, and 10–20 of U.S. Patent 8,606,589 B2 are unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

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Patent 8,606,589 B2

FOR PETITIONER:

James P. Murphy
Margaux A. Savee
Jonathan R. Spivey
LaTasha M. Snipes
POLSINELLI PC
jpmurphy@polsinelli.com
msavee@polsinelli.com
jspivey@polsinelli.com
tsnipes@polsinelli.com

FOR PATENT OWNER:

Paul M. Ulrich
Paul J. Linden
ULMER & BERNE LLP
pulrich@ulmer.com
plinden@ulmer.com

Frederick H. Gribbell
Russell F. Gribbell
FREDERICK H. GRIBBELL, LLC
fred.gribbell@ieee.org
russell@gribbelllaw.com