

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

RING LLC,
Petitioner,

v.

SKYBELL TECHNOLOGIES, INC.,
Patent Owner.

IPR2019-00447
Patent 9,743,049 B2

Before JEFFREY S. SMITH, DANIEL J. GALLIGAN, and
KAMRAN JIVANI, *Administrative Patent Judges*.

GALLIGAN, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

In this *inter partes* review, Ring LLC (“Petitioner”) challenges the patentability of claims 1–4, 7–15, and 18–21 of U.S. Patent No. 9,743,049 B2 (“the ’049 patent,” Ex. 1001), which is assigned to SkyBell Technologies, Inc. (“Patent Owner”).

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision, issued pursuant to 35 U.S.C. § 318(a), addresses issues and arguments raised during the trial in this *inter partes* review. For the reasons discussed below, we determine that Petitioner has proven by a preponderance of the evidence that claims 1–4, 7–15, and 18–21 of the ’049 patent are unpatentable. *See* 35 U.S.C. § 316(e) (2018) (“In an *inter partes* review instituted under this chapter, the petitioner shall have the burden of proving a proposition of unpatentability by a preponderance of the evidence.”).

A. Procedural History

On December 17, 2018, Petitioner requested *inter partes* review of claims 1–4, 7–15, and 18–21 of the ’049 patent on the following grounds:

Claim(s) Challenged	35 U.S.C. § ¹	Reference(s)
1–4, 7–10	103	Siminoff, ² Almomani ³
11–13, 15, 18–21	103	Siminoff

¹ The Leahy-Smith America Invents Act (“AIA”) included revisions to 35 U.S.C. §§ 102 and 103 that became effective before the filing of the application for the ’049 patent. Therefore, we apply the post-AIA versions of these sections.

² US 2015/0022620 A1, published Jan. 22, 2015 (Ex. 1005).

³ US 2014/0267740 A1, published Sept. 18, 2014 (Ex. 1006).

Claim(s) Challenged	35 U.S.C. § ¹	Reference(s)
14	103	Siminoff and Ring.com ⁴

Paper 2 (“Pet.”). Patent Owner filed a Preliminary Response. Paper 6. We instituted trial on all grounds of unpatentability. Paper 15 (“Dec. on Inst.”), 20.

During the trial, Patent Owner filed a Response (Paper 22, “PO Resp.”), Petitioner filed a Reply (Paper 24, “Pet. Reply”), and Patent Owner filed a Sur-reply (Paper 26, “PO Sur-reply”).

An oral hearing was held on April 16, 2020, a transcript of which appears in the record. Paper 34 (“Tr.”).

B. Related Matters

The parties note the following related matter: *SkyBell Techs., Inc. v. Ring Inc.*, 8:18-cv-00014 (C.D. Cal. 2018). Pet. 2–3; Paper 4, 2.

C. Real Parties in Interest

Petitioner identifies the following real parties in interest: Ring LLC, Ring of Security Limited, Ring of Security B.V., Ring of Security Pty. Ltd., Ring of Security Asia Co., Ltd., Ring Protect Inc., Wireless Environment, LLC, Wireless Environment Asia, LLC, Wireless Environment Lighting Co., Ltd., Wireless Environment UK Ltd., Wireless Lighting Technologies, LLC, Amazon.com Services, Inc., and Amazon.com, Inc. Pet. 2.

Patent Owner identifies itself as the real party in interest. Paper 4, 1.

⁴ Archived web pages that Petitioner asserts were captured from <https://ring.com> by the Internet Archive on March 20, 2015 (Ex. 1007, “Ring”). See Pet. 10.

D. The '049 Patent and Illustrative Claim

The '049 patent is generally directed to a doorbell communication system. Ex. 1001, code (57), 2:19–21. Figure 1 of the '049 patent is reproduced below.

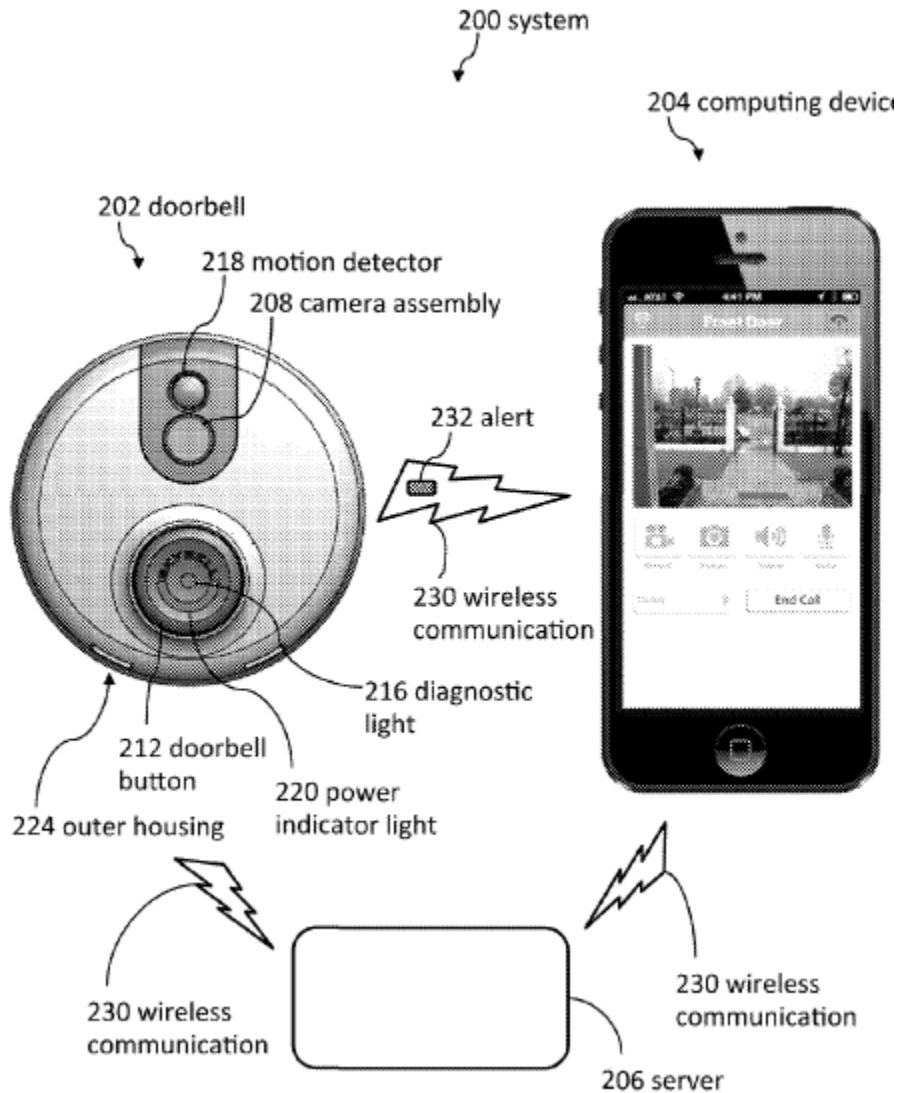


Figure 1, reproduced above, illustrates a front view of doorbell system 200. Ex. 1001, 5:66–6:2.

The '049 patent specification discloses that “doorbell system 200 can include a doorbell 202 (e.g., a security system) and a computing

device 204.” Ex. 1001, 5:67–6:2. “Wireless communication 230 can enable the doorbell 202 to communicate with the computing device 204.” Ex.

1001, 6:33–34. Further, “doorbell 202 can include a camera assembly 208 and a doorbell button 212.” Ex. 1001, 6:4–6. In addition, “camera assembly 208 can include a video camera, which in some embodiments is a webcam.”

Ex. 1001, 6:6–7. The ’049 patent specification explains that remote computing devices can include “laptops, tablets, mobile devices, smartphones, cellular phones, and wireless devices.” Ex. 1001, 5:21–23.

The ’049 patent specification also discloses the following:

In order to reduce power consumption, the doorbell 202 may be able to enter a camera sleep mode 704. While the doorbell 202 is in the camera sleep mode 704, the camera may not be able to record a video, but the power consumption is very low, or maybe even zero. In some embodiments, the remote computing device 204 may send a signal 604 to the doorbell 202 that overrides the sleep mode (e.g., changes a power setting 702) to cause the doorbell 202 to “wake up.” Waking up the doorbell 202 can cause the doorbell 202 to enter a higher-power mode that may enable the camera to record. This overriding can enable the video feed to start. The signal 604 can be sent when the user selects a button on the remote computing device 204 or when the user opens a software application. In some embodiments, a remote computing device can display a live video from the doorbell camera in response to a user opening a doorbell control application on the remote computing device.

Ex. 1001, 11:53–12:3.

Challenged independent claim 1 is illustrative and is reproduced below.

1. A doorbell system, comprising:
a doorbell comprising a camera and a button, the camera configurable to capture images and the button configurable to

enable a visitor to sound a chime, the doorbell configurable to enter a sleep mode whereby the camera does not capture images; wherein the doorbell [is] configurable to exit the sleep mode and enter a live view mode in response to a mobile application on a remote computing device and the doorbell receiving a wireless communication from the remote computing device.

II. ANALYSIS

A. Level of Ordinary Skill in the Art

Petitioner's declarant, Dr. Vijay Madiseti, testifies that a person of ordinary skill in the art of the '049 Patent would have had "a bachelor's degree in Electrical Engineering, Computer Engineering, or Computer Science, or equivalent training, as well as at least one year of technical experience in the relevant field. Lack of work experience can be remedied by additional education or training, and vice versa." Ex. 1003 ¶ 28, *cited in* Pet. 9. In the Decision on Institution, we agreed with this assessment, with the exception of the language "at least," which introduces ambiguity. Dec. on Inst. 9–10. Patent Owner agrees with Petitioner's proposed level of ordinary skill in the art. PO Resp. 5 ("For the purposes of this IPR proceeding, Patent Owner adopts Petitioner's definition of level of ordinary skill.").

Based on the full trial record and in view of the parties' agreement, we determine, consistent with the Decision on Institution, that a person of ordinary skill in the art would have had a bachelor's degree in Electrical Engineering, Computer Engineering, or Computer Science, or equivalent training, as well as one year of technical experience in the relevant field. *See* Dec. on Inst. 9–10; Pet. 9; PO Resp. 5; Ex. 1003 ¶ 28; Ex. 2001 ¶ 28.

B. Claim Interpretation

The Petition was accorded a filing date of December 17, 2018. Paper 5, 1. In an *inter partes* review for a petition filed on or after November 13, 2018, a claim “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) (2018); *see* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340 (Oct. 11, 2018) (now codified at 37 C.F.R. pt. 42 (2019)). In applying this claim construction standard, we are guided by the principle that the words of a claim “are generally given their ordinary and customary meaning,” as understood by a person of ordinary skill in the art in question at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc) (citation omitted). “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). There is a “heavy presumption,” however, that a claim term carries its ordinary and customary meaning. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) (citation omitted).

1. Live view mode

Patent Owner argues that “live view mode,” as recited in independent claims 1 and 11, means a “mode by which live video and/or audio from the doorbell is transmitted to and displayed on the remote computing device.” PO Resp. 9 (citing Ex. 2001 ¶ 46). Petitioner disagrees with this

construction. Pet. Reply 2–6. As explained below, we find the asserted prior art teaches a “live view mode” under Patent Owner’s proposed construction. Therefore, we apply Patent Owner’s construction in our patentability analysis below, and we need not resolve the parties’ dispute as to the meaning of “live view mode.” *See, e.g., Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

2. Constant power

Claim 21 recites, “The system of claim 11, wherein the doorbell receives constant power when the doorbell is in the sleep mode and the live view mode.” Patent Owner argues that “constant power” means power at the same level, such that claim 21 requires the doorbell to receive the same level of power in sleep mode and in live view mode. PO Resp. 34–35. Petitioner disagrees, arguing that “constant power” means “continual power (*i.e.*, power that is not ‘cut’),” not a constant power level. Pet. Reply 26–27; *see* Pet. 62 (quoting Ex. 1005 ¶ 55) (arguing that Siminoff’s disclosure that the doorbell is “continually powered” teaches the claimed “constant power” of claim 21). We agree with Petitioner.

As an initial matter, we note that the term “constant” appears nowhere in the ’049 patent other than in claim 21. Nevertheless, the specification of the ’049 patent is helpful in understanding how different modes consume different amounts of power. For example, the ’049 patent explains that “the doorbell 202 may have several power settings 702 (e.g., camera sleep mode 704, camera recording mode 706, standby mode)” and that “[d]ifferent

power settings 702 may be configured to use different amounts of power.” Ex. 1001, 12:17–23. The ’049 patent discloses “[o]verriding the power setting of the doorbell may comprise causing the doorbell to exit a camera sleep mode in which the camera is configured to not record, and may comprise enabling the camera to record the first video during a camera recording mode.” Ex. 1001, 3:2–6. The ’049 patent does not use the term “live view mode,” other than in the claims, so it does not state what the power consumption for that mode is, but the ’049 patent does distinguish between power consumption for sleep mode and power consumption for a mode in which the camera is on. The ’049 patent states the following:

Leaving the camera on all the time just in case the user wants to see a video can waste substantial power. In order to reduce power consumption, the doorbell 202 may be able to enter a camera sleep mode 704. While the doorbell 202 is in the camera sleep mode 704, the camera may not be able to record a video, but the power consumption is very low, or maybe even zero. In some embodiments, the remote computing device 204 may send a signal 604 to the doorbell 202 that overrides the sleep mode (e.g., changes a power setting 702) to cause the doorbell 202 to “wake up.” Waking up the doorbell 202 can cause the doorbell 202 to enter a higher-power mode that may enable the camera to record.

Ex. 1001, 11:52–58. Furthermore, “sleep mode” is described throughout the ’049 patent as a mode used to save power. Ex. 1001, 3:6–8, 3:56–57, 12:20–26, 15:24–30, 17:16–30. Patent Owner’s proposed interpretation of “constant power” in claim 21 contradicts the entire purpose of a “sleep mode,” which is to save power. For this reason, we do not agree with Patent Owner’s construction.

Additionally, Petitioner directs us to the prosecution history to support its argument. Pet. Reply 26 (citing Ex. 1002, 77, 82). As noted by

Petitioner (Pet. Reply 26), the applicant during prosecution amended claim 1 to include the limitation reciting “wherein the electronic doorbell receives constant power when the doorbell is in the sleep mode and the live view mode.” Ex. 1002, 77 (amendment in January 31, 2017 Office Action Response). Based on the amendment, the applicant argued the following:

Additionally, the Office Action asserts that Huang discloses that the electronic doorbell is configurable to enter a camera sleep mode whereby the camera does not capture images (i.e. in response to the command, the IP camera 250 can trigger a switch 262 in the DC power lines 256 to cut power to the IP camera module 260 which would not be able to capture images). Accordingly, Huang discloses that the electronic doorbell is configurable to enter a camera sleep mode whereby the camera does not capture images when there is a loss in power to the IP camera module 260. However, neither Ruiz, Huang, Huisking, nor Slater discloses that the electronic doorbell receives *constant power* when the doorbell is in the sleep mode and the live view mode.

Ex. 1002, 82. According to Petitioner, “[t]his indicates the patentee understood ‘constant power’ to mean continual power (*i.e.*, power that is not ‘cut’).” Pet. Reply 26. Patent Owner argues that “[t]he referenced ‘loss in power’ does not necessarily mean *no power*, but could also refer to simply a reduction in power.” PO Sur-reply 9–10. In this case, however, “loss in power” means “no power.” In particular, Huang⁵ discloses “the IP camera can enter a low power state by *disconnecting* an IP camera module as described above with respect to FIG. 2.” Ex. 3001 ¶ 47 (emphasis added). Referring to Figure 2, Haung discloses “instructing the IP camera 250 to enter a low power mode” by “trigger[ing] a switch 262 in the DC power

⁵ US 2014/0266767 A1, published Sept. 18, 2014 (Ex. 3001).

lines 256 to cut power to the IP camera module 260.” Ex. 3001 ¶ 35. Thus, Huang discloses disconnecting power from IP camera module 260, which the applicant characterized as a “loss in power” that is different from the claimed “constant power.” Ex. 1002, 82. Thus, we agree with Petitioner that the applicant during prosecution understood “constant power” to mean power that is not disconnected rather than a constant *level* of power.

We note that Dr. Baker, Patent Owner’s declarant, provides the following testimony on this subject:

Petitioner erroneously equates “continual” or ongoing power, with the “constant power” of claim 21, meaning power at the same level. A [person of ordinary skill in the art] understands there is a difference between the same term. “Constant Power” refers to power at the same level. “Continual Power” simply denotes continuing to receive power which could be at variable levels.

Ex. 2001 ¶ 88, *cited in* PO Resp. 34. Dr. Baker, however, does not explain how this interpretation is supported by the specification of the ’049 patent, and, therefore, we find it to be of little value in light of the intrinsic record discussed above. *See Phillips*, 415 F.3d at 1318 (authorizing the consideration of extrinsic evidence in determining the meaning of claims but noting that it is “in general . . . less reliable than the patent and its prosecution history in determining how to read claim terms”).

In view of the foregoing, we construe “constant power” to mean “continual power” or “power that is not disconnected” because this is the meaning that is consistent with the intrinsic record.

C. Principles of Law

A patent claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are such that

the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) any secondary considerations, if in evidence.⁶ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

*D. Obviousness over the Combination of Siminoff and Almomani
(Claims 1–4 and 7–10)*

Petitioner asserts claims 1–4 and 7–10 of the ’049 patent are unpatentable under 35 U.S.C. § 103 as obvious over the combined teachings of Siminoff and Almomani. Pet. 9, 12–44.

1. Siminoff

Siminoff is directed to a doorbell system and includes a smart device and a wireless communication doorbell with a camera and a doorbell button. Ex. 1005 ¶¶ 74, 78–79, 88–91. The smart device is coupled to the doorbell by a wireless system network and a wireless user’s network. Ex. 1005 ¶¶ 74–79, 88–89. Further, the smart device includes an application that “provide[s] an interface for User 62 to communicate and interact with Wireless Communication Doorbell 61” across these networks. Ex. 1005 ¶ 80. Siminoff discloses that the doorbell camera may “record live video or still images” of a visitor and that the system “may stream live video or still

⁶ Patent Owner does not present any objective evidence of nonobviousness (i.e., secondary considerations) as to any of the challenged claims.

images to Smart Device 54,” which allows users to “see who is within view of Wireless Communication Doorbell 61 at any given time.” Ex. 1005 ¶¶ 46, 79, 81. Siminoff teaches that “all hardware components within Wireless Communication Doorbell 61 may live in a state of hibernation,” referred to as “a low power consumption mode.” Ex. 1005 ¶¶ 87, 90. Claim 1 of Siminoff recites “switching the processor from low-power mode to active mode in response to an activation trigger” “wherein the activation trigger comprises . . . a signal from the user at the remote communication device.” Ex. 1005, Claim 1.

2. *Almomani*

Almomani “relates to an electronic lock with an integral camera that allows remote monitoring.” Ex. 1006 ¶ 5. This electronic lock is “configured with wireless communication capabilities” and “allows the user to remotely see who is at the door,” for example, by “stream[ing] video taken by the camera to remote electronic devices.” Ex. 1006 ¶¶ 5, 20. In particular, Almomani teaches that “the camera could be selectively activated remotely by a user.” Ex. 1006 ¶ 21. Almomani further explains that the user “can use a dedicated app on a mobile device” that is in wireless communication with the electronic lock “to activate a remote monitoring mode.” Ex. 1006 ¶ 21. “In this mode, the electronic lock could be configured to continuously stream video, regardless of whether the motion sensor 103 is activated or not.” Ex. 1006 ¶ 21.

3. *Independent Claim 1*

a) *Petitioner’s undisputed contentions and our findings*

Claim 1 is directed to “[a] doorbell system.” Petitioner contends “Siminoff teaches a doorbell system that includes a ‘Wireless

Communication Doorbell 61,’ as shown in Fig. 15.” Pet. 23 (citing Ex. 1005, Fig. 15; Ex. 1003, 37). We agree, and we find Siminoff teaches a doorbell system.⁷

Claim 1 recites “a doorbell comprising a camera and a button, the camera configurable to capture images and the button configurable to enable a visitor to sound a chime.” Petitioner contends Siminoff’s disclosure of doorbell 61 with camera 18 and button 11, as illustrated in Fig. 12, teaches this subject matter. Pet. 23–25 (citing Ex. 1005 ¶¶ 46, 53, 63, 66, 74, 83); *see* Ex. 1003, 38–42. For example, Siminoff discloses that “[c]amera 18 may record still or moving video, (e.g. anyone who activates Wireless Communication Doorbell 61 by pressing Button 8, or triggering Infrared Sensor 42).” Ex. 1005 ¶ 66. Siminoff also discloses that “Wireless Communication Doorbell 61 may communicate with Third Party Doorbell Chime 59,” which “may be a stand-alone product or component that may emit an audio chime or message, amongst other functions to User 62 when Button 11 is pressed on Wireless Communication Doorbell 61.” Ex. 1005 ¶ 83. Based on this evidence, we are persuaded, and we find, that Siminoff teaches “a doorbell comprising a camera and a button, the camera configurable to capture images and the button configurable to enable a visitor to sound a chime.”

b) Configurable to enter a sleep mode

Claim 1 recites “the doorbell configurable to enter a sleep mode whereby the camera does not capture images.” Petitioner contends

⁷ We need not decide whether the preambles of the challenged claims are limiting because we find that Petitioner has shown that these preamble recitations are taught by the cited art.

Siminoff's disclosure of a low power consumption, or hibernation, mode in which the doorbell camera does not capture images teaches this subject matter. Pet. 25–26 (citing Ex. 1005, code (57), ¶¶ 46, 76, 87, 90). Patent Owner argues that claim 1 “requires *entering* a sleep mode, *e.g.*, being deactivated, entering hibernation, or triggering to go to sleep,” and Patent Owner argues that the Petition only cites Siminoff's disclosure of exiting a sleep mode, not entering a sleep mode. PO Resp. 22 (citing Pet. 25–26; Ex. 1005 ¶ 46); *see also* PO Sur-reply 8–9.

We are persuaded that Petitioner has shown that Siminoff teaches a doorbell configurable to enter a sleep mode. We find that Siminoff's disclosure that low power consumption mode (or hibernation mode) is a mode of the doorbell, as cited by Petitioner (*see* Pet. 25–26), teaches to a person of ordinary skill in the art that the doorbell can enter that mode, *i.e.*, is “configurable to enter” that mode so that mode can be used. Furthermore, as noted in the Decision on Institution, “Siminoff discloses certain conditions under which its ‘Wireless Communication Doorbell 61 returns to a low power consumption mode.’” Dec. on Inst. 12 (quoting Ex. 1005 ¶ 87). Siminoff also discloses the following:

In one method and system of the present disclosure, all hardware components within Wireless Communication Doorbell 61 may live in a state of hibernation until Button 11 is pressed by Visitor 63. In this aspect, all components that draw power from Battery 24, such as Communications Module 23 and *Camera 18 do not waste battery power when not in use*. When Button 11 is pressed, it may activate all components, and when streaming data to Smart Device 54 ceases, *all components may return to hibernation mode*.

Ex. 1005 ¶ 90 (emphases added). We agree with Petitioner's contention that Siminoff's disclosure of the camera not being “in use” in hibernation mode

teaches “a sleep mode whereby the camera does not capture images,” as recited in claim 1. *See* Pet. 25 (citing Ex. 1005 ¶ 90). This quoted disclosure of Siminoff also teaches that the doorbell enters sleep mode by “return[ing] to hibernation mode.”

Based on the foregoing, we find Siminoff teaches “the doorbell configurable to enter a sleep mode whereby the camera does not capture images,” as recited in claim 1.

c) Configurable to enter a live view mode

Claim 1 recites “wherein the doorbell [is] configurable to exit the sleep mode and enter a live view mode in response to a mobile application on a remote computing device and the doorbell receiving a wireless communication from the remote computing device.” Petitioner contends that the combination of Siminoff and Almomani teaches this subject matter. Pet. 26–33. Petitioner argues that Siminoff discloses various activation triggers, including a signal from a remote communication device (“Smart Device 54”), that can wake the doorbell and cause the camera to record video that is sent to the remote communication device. Pet. 27–30 (citing Ex. 1005, claim 1, ¶¶ 46, 66, 76, 79, 80, 86, 88, Fig. 12). Petitioner acknowledges that “Siminoff lacks express details as to whether this activation signal also causes the camera to begin recording.” Pet. 19. Petitioner argues that Almomani discloses an electronic lock with a camera that can stream video to a remote device so that a user can see who is at the door. Pet. 16–17, 31–32 (citing Ex. 1006 ¶¶ 5, 8, 20, 21, Fig. 4). Petitioner contends that “Almomani . . . teaches that a user of an application on a mobile device may selectively activate a door-based camera and receive streaming video,” and Petitioner argues it would have been obvious to

combine the teachings of Siminoff and Almomani to teach the subject matter of claim 1. Pet. 19–22.

Patent Owner presents four arguments as to this recited subject matter. First, Patent Owner argues that Siminoff does not teach a “doorbell configurable to exit the sleep mode and enter a live view mode in response to a mobile application on a remote computing device and the doorbell receiving a wireless communication from the remote computing device” because Siminoff does not teach a “live view mode.” PO Resp. 14–16. Second, Patent Owner argues that Siminoff does not teach an activation trigger for the camera that originates from a remote computing device. PO Resp. 15–17. Third, Patent Owner argues that Almomani does not teach a live view mode. PO Resp. 17–19. Fourth, Patent Owner contends that a person of ordinary skill in the art would not have been motivated to combine Siminoff and Almomani. PO Resp. 19–21. We address Patent Owner’s first, third, and fourth arguments below, and in view of our findings, we need not reach Patent Owner’s second argument.

Turning to Patent Owner’s first argument, we disagree that Siminoff does not teach a “live view mode.” *See* PO Resp. 14–15. As discussed above, we apply the definition of “live view mode” proffered by Patent Owner – i.e., a “mode by which live video and/or audio from the doorbell is transmitted to and displayed on the remote computing device”). PO Resp. 9. Siminoff discloses that its system “allows User 62 to connect multiple Smart Devices 54 . . . to Wireless Communication Doorbell 61. In this aspect, multiple authorized User[]s 62 may see who is within view of Wireless Communication Doorbell 61 at any given time.” Ex. 1005 ¶ 79. Indeed, Siminoff discloses “stream[ing] live video or still images to Smart Device

54.” Ex. 1005 ¶ 81, *quoted in* Pet. 16. Thus, Siminoff’s system provides a “live view” of who is at the door at any given time, and Siminoff does this by transmitting live video to “Smart Device 54,” which Siminoff discloses “may be any electronic device capable of receiving and transmitting data via the internet, capable of transmitting and receiving audio and video communications.” Ex. 1005 ¶ 79; *see also* Ex. 1005 ¶ 87 (Siminoff disclosing that its system allows “Visitor 63 [at the doorbell] and User 62 [to] communicate via video and audio transmitted sent to and from Wireless Communication Doorbell 61 and Smart Device 54 at Step 208”). Based on Siminoff’s disclosure of a doorbell that transmits live video to a remote computing device, we are persuaded, and we find, that Siminoff teaches a “live view mode.”

For its second argument, Patent Owner argues that Siminoff does not teach an activation trigger for the camera that originates from a remote computing device. PO Resp. 15–17. Because, as discussed below, we find that Almomani teaches this subject matter and that a person of ordinary skill in the art would have been motivated to combine the teachings of Almomani and Siminoff, we need not resolve the parties’ dispute as to whether Siminoff alone teaches this subject matter.

For its third argument, Patent Owner argues that “Almomani does not teach streaming video to a mobile phone” but, rather, “only discloses streaming video from the doorbell camera to a dedicated website.” PO Resp. 17–18 (citing Ex. 2001 ¶ 56). According to Patent Owner, Almomani “teaches that only still images (*e.g.* photos) are sent to devices such as mobile phones.” PO Resp. 18. This argument is refuted by Almomani’s disclosure of “an electronic lock with an integral camera that allows remote

monitoring” and “allows the user to remotely see who is at the door via any medium that can present media content (e.g., digital ‘still image’ or ‘streaming video[’]) such as a smart phone, digital TV, tablet, PC, laptop or any equivalent medium.” Ex. 1006 ¶ 5, *cited in* Pet. 16, 31. Thus, Almomani discloses streaming video to a mobile phone. Furthermore, Almomani discloses the following:

[T]he camera could be selectively activated remotely by a user. For example, the user could access and set configurable options through a designated website *or use a dedicated app on a mobile device*. Consider an example in which the user is leaving town for a few days for a trip. If the user wanted to remotely monitor the electronic lock 100, the user could log in to a designated website (*or use an app*) to activate a remote monitoring mode. In this mode, the electronic lock could be configured to continuously stream video, regardless of whether the motion sensor 103 is activated or not. This provides the user with peace of mind to remotely see the area surrounding the electronic lock.

Ex. 1006 ¶ 21 (emphases added), *cited in* Pet. 16–17. Thus, Almomani discloses using an app on a mobile device to monitor video that is “continuously stream[ed]” from the electronic lock to see the area around the lock. We find that Almomani’s continuous streaming mode teaches streaming live video based on Almomani’s disclosure that a user can “remotely see the area surrounding the electronic lock.”⁸ Therefore, we find Almomani teaches a “mode by which live video and/or audio from the

⁸ This understanding is consistent with the following assertion by Patent Owner in IPR2019-00446: “There is no disclosure in Almomani of recording the continuously streamed video for later use. As noted above, in Almomani, the ‘remote monitoring mode’ allows the user ‘to see the area surrounding the lock’ at the time he or she logs into the website.” IPR2019-00446, Paper 21, 17 (citing Ex. 1006 ¶ 21; other citation omitted).

doorbell is transmitted to and displayed on the remote computing device,” i.e., a “live view mode.”

For its fourth argument, Patent Owner argues that combining Almomani’s teachings of remotely activating the doorbell camera “would frustrate Siminoff’s intended purpose of saving power by rendering the camera inoperable when motion is not detected.” PO Resp. 20 (citing Ex. 2001 ¶ 62). According to Patent Owner, in the proposed combination, “the low power consumption mode would not be used, and battery power would be wasted recording video for which there [is] no associated motion or activity.” PO Resp. 21 (citing Ex. 2001 ¶ 63). We disagree with these arguments because, as Petitioner correctly points out (Pet. 27), Siminoff discloses that an “activation trigger” for switching “from low-power mode to active mode” may include “a signal from [a] user at [a] remote communication device.” Ex. 1005, claim 1. Thus, Siminoff is not limited to exiting low power mode only upon motion detection. Rather, Siminoff expressly discloses exiting a low power mode based on a signal from a remote device. Almomani provides the express disclosure of using a mobile phone to activate a camera to stream live video, as discussed above, thereby supplying the details that Petitioner acknowledges are lacking in Siminoff. *See* Pet. 19 (“Siminoff lacks express details as to whether this activation signal [of Siminoff’s claim 1] also causes the camera to begin recording. Almomani, however, teaches that a user of an application on a mobile device may selectively activate a door-based camera and receive streaming video.”).

Petitioner argues that “modifying Siminoff to include Almomani’s remote camera activation technique would allow the doorbell to stay in the

hibernation mode and to save power when not in use, but, at the same time, allow a user to selectively request a video stream of the area around the doorbell.” Pet. 20 (citing Ex. 1003 ¶ 54). Petitioner also contends that the combination of Siminoff and Almomani “would allow a user to view streaming video of the area around the Wireless Communication Doorbell ‘at any given time’—explicitly advancing one of Siminoff’s stated goals.” Pet. 20 (citing Ex. 1005 ¶ 79; Ex. 1003 ¶ 53). We are persuaded that a person of ordinary skill in the art would have been motivated to combine Almomani’s remote camera activation technique with Siminoff’s doorbell teachings for these reasons. In particular, Siminoff discloses that “Application 55 may be installed on SmartDevice 54 and provide an interface for User 62 to communicate and interact with Wireless Communication Doorbell 61.” Ex. 1005 ¶ 80, *quoted in* Pet. 29; *see also* Ex. 1005 ¶ 79 (Siminoff providing a list of exemplary smart devices including “smartphones, tablets, laptops”), *cited in* Pet. 29. Siminoff also discloses that “[i]n one aspect, upon depressing Button 11 [on doorbell 61] *or another trigger* may cause Camera 18 of Wireless Communication Doorbell 61 to record a static or continuous video image, which is sent to User 62 along with notification at Smart Device 54.” Ex. 1005 ¶ 86 (emphasis added), *quoted in* Pet. 28. Thus, Siminoff discloses waking the camera to send video to a remote computing device (“Smart Device 54”) with a “trigger,” and Siminoff’s claim 1 discloses that an “activation trigger” includes “a signal from [a] user at [a] remote communication device.” In view of Siminoff’s disclosure of an application on a remote device such as a smart phone interacting with the doorbell and its disclosure of providing users the ability to “see who is within view of Wireless Communication

Doorbell 61 at any given time” (Ex. 1005 ¶ 79), we find that combining Almomani’s remote activation teachings with the teachings of Siminoff would have improved Siminoff’s system by increasing user functionality and maintaining power saving functionality, thereby motivating a person of ordinary skill in the art to make the combination. *See* Ex. 1003 ¶¶ 53–54 (Dr. Madisetti testifying as to benefits of combining teachings of Siminoff and Almomani).

Patent Owner argues that “Almomani teaches that *only* still images are sent to devices such as mobile phones whereas video is provided via a designated website” and, therefore, that “Almomani teaches away from viewing video taken by the camera on the remote computing device.” PO Resp. 21 (citing Ex. 2001 ¶ 64; Ex. 1006 ¶ 20). As discussed above, Patent Owner’s characterization of Almomani in this regard is incorrect, and, therefore, Patent Owner’s teaching away argument fails.⁹

Based on the evidence discussed above, we find the combination of Siminoff and Almomani teaches a “doorbell configurable to exit the sleep mode and enter a live view mode in response to a mobile application on a remote computing device and the doorbell receiving a wireless communication from the remote computing device,” and we find that a person of ordinary skill in the art would have been motivated to combine the teachings of Siminoff and Almomani as proposed by Petitioner. Based on these findings, we need not address Patent Owner’s arguments regarding whether Siminoff alone teaches or suggests this claimed subject matter. *See* PO Resp. 15–17.

⁹ This statement is not meant to imply that Almomani would teach away if Patent Owner’s characterization of Almomani were correct.

d) Determination of unpatentability of claim 1

For the reasons discussed above, we find that the combination of Siminoff and Almomani teaches all of the limitations of claim 1 and that a person of ordinary skill in the art would have had reason to, and would have been motivated to, combine the teachings of these references in the manner asserted. Having considered the full record developed during trial, we are persuaded by Petitioner's contentions and evidence, and we determine that Petitioner has proven by a preponderance of the evidence that claim 1 of the '049 patent is unpatentable under 35 U.S.C. § 103 as obvious over the combined teachings of Siminoff and Almomani.

4. Dependent Claims 2–4 and 7

Claims 2–4 and 7 depend from independent claim 1. Petitioner presents persuasive arguments and evidence showing how the combination of Siminoff and Almomani teaches the subject matter recited in these claims. *See* Pet. 33–39.

Claim 2 recites, “The system of claim 1, further comprising the remote computing device communicatively coupled to the doorbell, the remote computing device configurable to display a first image while the doorbell is in the live view mode.” Claim 3 recites, “The system of claim 2, wherein the remote computing device comprises at least one of a smartphone and a tablet, and wherein the first image is visually displayed by the remote computing device.” Claim 4 recites, “The system of claim 3, wherein in the live mode the camera captures a first video comprising the first image.”

Petitioner contends that Siminoff discloses that “Smart Device 54,” which may be a smart phone or a tablet, communicates with the wireless doorbell and, therefore, that Siminoff teaches “the remote computing device

communicatively coupled to the doorbell,” as recited in claim 2, and “wherein the remote computing device comprises at least one of a smartphone and a tablet,” as recited in claim 3. Pet. 33–35 (citing Ex. 1005 ¶¶ 78, 79, 80, 88, Fig. 15; Ex. 1003, 52–55); *see* Ex. 1005 ¶ 79 (“Examples of Smart Device 54’s are but not limited to smart phones, tablets, laptops, computers and VOIP telephone systems. The infrastructure described above allows User 62 to connect multiple Smart Devices 54, within the parameters just mentioned, to Wireless Communication Doorbell 61.”). Petitioner argues Siminoff’s and Almomani’s disclosures of streaming video to the remote device, discussed in detail with respect to claim 1, teach “the remote computing device configurable to display a first image while the doorbell is in the live view mode,” as recited in claim 2, “wherein the first image is visually displayed by the remote computing device,” as recited in claim 3, and “wherein in the live mode the camera captures a first video comprising the first image,” as recited in claim 4. Pet. 35–39 (citing Ex. 1005 ¶¶ 46, 66, 76, 79–81, 86, Fig. 12; Ex. 1006 ¶¶ 5, 21; Ex. 1003, 57–60).

Claim 7 recites, “The system of claim 1, wherein the live view mode consumes more power than the sleep mode.” Petitioner contends that Siminoff’s live view mode, in which the camera is operating, consumes more power than Siminoff’s “low power consumption mode” or “hibernation mode.” Pet. 39–40 (citing Ex. 1005, code (57), ¶¶ 46, 66, 76, 86, 87, 90; Ex. 1003, 60–62).

Patent Owner does not separately address the additional limitations recited in claims 2–4 and 7. *See generally* PO Resp.

Having considered the full record developed during trial, we are persuaded by Petitioner’s contentions and evidence, summarized above, and

we determine that Petitioner has proven by a preponderance of the evidence that claims 2–4 and 7 of the '049 patent are unpatentable under 35 U.S.C. § 103 as obvious over the combined teachings of Siminoff and Almomani.

5. Dependent Claims 8–10

Claim 8 recites, “The system of claim 1, wherein the doorbell is configurable to attach to a building and be powered by a battery power source.” Petitioner contends that Siminoff’s disclosures of mounting the doorbell to a building and powering the doorbell with a battery teach this subject matter. Pet. 40–41 (citing Ex. 1005 ¶¶ 56, 65, 74; Ex. 1003, 62–64).

Patent Owner argues that Siminoff does not teach a doorbell that is “powered by a battery power source,” as recited in claim 8, because “[a]s shown in Figure 12 it is Power Processor 51, not Battery 24, that supplies power to the doorbell components.” PO Resp. 24. We disagree. We find that Siminoff’s disclosure that “Battery 24 holds the power that Power Processor 51 used to distribute to all components within Wireless Communication Device 61” teaches a doorbell that is “powered by a battery power source.” Ex. 1005 ¶ 74.

Patent Owner does not separately address the limitation of claim 8 reciting that “the doorbell is configurable to attach to a building.” We are persuaded by Petitioner’s showing with respect to this limitation. *See* Ex. 1005 ¶ 56 (disclosing that “Mounting Plate 35 may be any material capable of Supporting Wireless Communication Doorbell 61” and that “Mounting Plate 35 may have multiple Mounting Plate Screw Ports 36, to allow user 62 to securely mount Mounting Plate 35 to an exterior Surface,” which “may be adjacent to an exterior door of a building”).

Claim 9 recites, “The system of claim 1, wherein the doorbell is configurable to attach to a building and be powered by an AC power source.” Claim 10 recites, “The system of claim 1, wherein the doorbell is configurable to attach to a building and be electrically coupled, via electrical wires, to a building power source whereby the doorbell receives power from the building power source.” Petitioner contends that Siminoff discloses that the doorbell may be powered by an AC power source from the building to which it is attached, thereby teaching the subject matter of these claims. Pet. 41–44 (citing Ex. 1005 ¶¶ 55, 56, 65, Fig. 12; Ex. 1003, 64–67); *see* Ex. 1005 ¶ 55 (“Wireless Communication Doorbell 61 may be continually powered or charged by hard-wiring Wireless Communication Doorbell 61 directly to Electrical Wiring 60, such as to an AC or DC electrical circuit. In this aspect, Electrical Wiring 60, drawing power from the building that Wireless Communication Doorbell 61 may be mounted to, must be present. This connection is made by sending an electric current from Electrical Wiring 60 to Conductive Prongs 27, located within Housing 5.”).

Patent Owner does not separately address the additional limitations recited in claims 9 and 10.

Having considered the full record developed during trial, we are persuaded by Petitioner’s contentions and evidence, summarized above, and we determine that Petitioner has proven by a preponderance of the evidence that claims 8–10 of the ’049 patent are unpatentable under 35 U.S.C. § 103 as obvious over the combined teachings of Siminoff and Almomani.

*E. Obviousness over Siminoff
(Claims 11–13, 15, 18–21)*

Petitioner asserts that claims 11–13, 15, and 18–21 of the '049 patent are unpatentable under 35 U.S.C. § 103 as obvious over the teachings of Siminoff. Pet. 9, 44–62.

1. Independent Claim 11

Independent claim 11 is reproduced below with emphases in italics to show limitations that are found in claims 1 and 2 and underlining to show additional subject matter.

A doorbell system, comprising:

a doorbell comprising a camera, a button, and a motion sensor, the camera configurable to capture images, the button configurable to enable a visitor to sound a chime, the motion sensor configurable to detect motion, and the doorbell configurable to enter a sleep mode whereby the camera does not capture images, wherein when the doorbell is in the sleep mode the doorbell is configurable to detect motion and thereby enter a live view mode in response to detecting motion; and

a remote computing device communicatively coupled to the doorbell, the remote computing device configurable to display an image captured by the camera when the doorbell is in the live view mode.

As can be seen from the underlined subject matter, claim 11 differs from claim 1 in requiring a motion sensor in the doorbell system and in using the motion sensor to enter a live view mode from a sleep mode.

For the limitations in common with claims 1 and 2, we refer to our discussion of claims 1 (§ II.D.3) and 2 (§ II.D.4) and incorporate those findings for our obviousness analysis here. We focus on the additional subject matter recited with respect to the claimed “motion sensor.”

Petitioner contends Siminoff's infrared sensor teaches the claimed "motion sensor" that is "configurable to detect motion." Pet. 45–47, 50 (citing Ex. 1005 ¶¶ 46, 53, 66, 74, Fig. 12; Ex. 1003, 70). Petitioner further contends that Siminoff discloses that its infrared sensor will wake the doorbell when a visitor crosses in front of it and cause the camera to record live video, thereby teaching that "when the doorbell is in the sleep mode the doorbell is configurable to detect motion and thereby enter a live view mode in response to detecting motion," as recited in claim 11. Pet. 52–53 (citing Ex. 1005 ¶¶ 46, 66); *see also* Pet. 56–57 (citing Ex. 1005 ¶¶ 66, 76, 79–81, 86, Fig. 12; Ex. 1003, 84–86) (addressing the limitation of claim 11 reciting "the remote computing device configurable to display an image captured by the camera when the doorbell is in the live view mode").

Patent Owner does not dispute that Siminoff's infrared sensor teaches a "motion sensor" that is "configurable to detect motion." Rather, Patent Owner argues that Siminoff does not teach entering a "live view mode" in response to detecting motion. PO Resp. 25–27. As discussed with respect to claim 1 in § II.D.3.c above, we find that Siminoff teaches a "mode by which live video and/or audio from the doorbell is transmitted to and displayed on the remote computing device," i.e., a "live view mode." As explained below, we also are persuaded that Siminoff teaches entering this mode "in response to detecting motion."

Siminoff discloses the following: "Wireless Communication Doorbell 61 may be triggered to wake through Infrared Sensor 42, installed within Housing 5. Infrared Sensor 42 may trigger Camera 18 to record live video or still images of Visitor 63 when Visitor 63 crosses the path of the

Infrared Sensor 42.” Ex. 1005 ¶ 46. Siminoff further discloses the following:

Camera 18 may record still or moving video, (e.g. *anyone who activates Wireless Communication Doorbell 61 by pressing Button 8, or triggering Infrared Sensor 42*). Camera 18 may send the recorded video or images to Microcontroller 22, to be sent to Smart Device 54 and Database 64 via Communications Module 23.

Ex. 1005 ¶ 66. Based on these disclosures, we are persuaded, and we find, that Siminoff teaches a “motion sensor” that is “configurable to detect motion” because Siminoff’s infrared sensor senses the motion of the visitor who crosses the path of the sensor. Petitioner sets forth an alternative argument based on Siminoff’s disclosure of a multi-sensor configuration. Pet. 47–50. In view of our finding that Siminoff’s infrared sensor teaches a “motion sensor” that is “configurable to detect motion,” we need not rely on Petitioner’s alternative argument.

Furthermore, we find that Siminoff teaches that “when the doorbell is in the sleep mode the doorbell is configurable to detect motion and thereby enter a live view mode in response to detecting motion.” As noted above, Siminoff discloses that the doorbell and the camera may be awakened “to record live video” when a visitor “crosses the path of the Infrared Sensor 42.” Ex. 1005 ¶ 46. Siminoff discloses that, upon being triggered by the infrared sensor, “Camera 18 may send the recorded video or images to Microcontroller 22, to be sent to Smart Device 54 and Database 64 via Communications Module 23.” Ex. 1005 ¶ 66. Still further, Siminoff discloses that “depressing Button 11 *or another trigger* may cause Camera 18 of Wireless Communication Doorbell 61 to record a static or continuous video image, which is sent to User 62 along with notification at

Smart Device 54.” Ex. 1005 ¶ 86 (emphasis added), *quoted in* Pet. 56. Thus, Siminoff discloses motion sensed by the infrared sensor as an activation trigger to wake the camera to record live video, and it discloses sending that video to the smart device.

Patent Owner argues that “[n]either the Petition, nor Dr. Madisetti, cite to any disclosure from Siminoff that triggering the motion sensor causes live video to be transmitted to and displayed on the remote computing device as required by the proper construction of ‘live view mode.’” PO Resp. 26 (citing Pet. 53–54; Ex. 1003, 81–82; Ex. 2001 ¶ 71). We disagree in view of our discussion in the preceding paragraph and in view of Petitioner’s explanation of how Siminoff’s “Smart Device is configured to display live images and video when the camera in the Wireless Communication Doorbell is active and recording continuous video with the camera.” Pet. 56–57 (citing Ex. 1005 ¶¶ 66, 76, 79–81, 86, Fig. 12).

Patent Owner contends that, “[t]o the extent Siminoff teaches the transmission of video to the remote device, it is only after several events subsequent to the sensing of motion including: (a) send a notification to the user; and (b) which the user must choose to ‘either accept or deny/ignore.’” PO Resp. 27 (citing Ex. 1005 ¶ 131; Ex. 2001 ¶ 72). Patent Owner is correct that Siminoff discloses giving the user of the remote device the option whether to accept or deny the streaming video. Indeed, Petitioner relies on this disclosure in the Petition as follows: “Siminoff teaches that when the camera has been powered up and activated by an activation trigger the application on the Smart device generates an ‘Accept/Deny Prompt 56’ and, ‘[i]f the request is accepted, System Network 52 *may stream live video or still images to Smart Device 54.*” Pet. 56–57 (citing Ex. 1005 ¶¶ 76, 81, Fig.

12). We find that these additional options do not make Siminoff's doorbell any less "configurable to detect motion and thereby enter a live view mode in response to detecting motion," as recited in claim 11. Whether the user at a remote device accepts or denies the request, the doorbell itself still has the claimed configurability.

Based on the foregoing discussion, we find Siminoff teaches "when the doorbell is in the sleep mode the doorbell is configurable to detect motion and thereby enter a live view mode in response to detecting motion."

For the reasons discussed above in this section and in §§ II.D.3 (claim 1) and II.D.4 (claim 2), we find Siminoff teaches all of the limitations of claim 11. Having considered the full record developed during trial, we are persuaded by Petitioner's contentions and evidence, and we determine that Petitioner has proven by a preponderance of the evidence that claim 11 of the '049 patent is unpatentable under 35 U.S.C. § 103 as obvious over the teachings of Siminoff.

2. Claims 12, 13, 15, and 18–21

Claims 12, 13, 15, and 18–21 depend from independent claim 11. Petitioner presents persuasive arguments and evidence showing how Siminoff teaches the subject matter recited in these claims. *See* Pet. 57–62. Patent Owner presents arguments as to claims 13, 15, 18, and 21.

a) Claim 12

Claim 12 recites, "The system of claim 11, wherein the remote computing device comprises at least one of a smartphone and a tablet." For reasons explained with respect to claim 3 above in § II.D.4, we are persuaded Siminoff teaches that the remote computing device comprises a smartphone and a tablet. *See* Ex. 1005 ¶ 79 ("Examples of Smart

Device 54's are but not limited to smart phones, tablets, laptops, computers and VOIP telephone systems.”).

b) Claims 13 and 15

Claim 13 recites, “The system of claim 12, wherein the remote computing device is configurable to display a video of the motion detected by the motion sensor.” Claim 15 recites, “The system of claim 11, wherein the motion detected by the motion sensor automatically causes the camera to record an image of the motion.”

Referring to its discussion for claim 11, Petitioner argues that Siminoff's disclosure of the camera being activated by motion detected by the infrared sensor to record video and send that video to the remote computing device teaches the subject matter of claim 13. Pet. 57–59 (citing, *inter alia*, Ex. 1005 ¶¶ 46, 66, 80, 86; Ex. 1003, 88–90). For claim 15, Petitioner also refers to its contentions for claim 11 and argues that Siminoff's disclosure of the camera being activated by motion detected by the infrared sensor to record video teaches that “the motion detected by the motion sensor automatically causes the camera to record an image of the motion.” Pet. 59–60 (citing, *inter alia*, Ex. 1005 ¶¶ 46, 66; Ex. 1003, 90–91).

For these claims, Patent Owner argues that, because “the sensed motion ‘triggers’ the infrared sensor and causes the camera to start recording, the camera is not recording ‘the motion’ but instead actions occurring subsequent to the motion.” PO Resp. 28 (citing Ex. 2001 ¶ 76); *see also* PO Resp. 30–31 (making similar argument for claim 15). More particularly, Patent Owner argues that “Siminoff teaches that the doorbell camera begins recording only after: (1) the motion is detected by the

infrared sensor; and (2) the camera wakes up from low power mode.” PO Resp. 29. This, however, is precisely what is recited in the claims of the ’049 patent. Claim 11 recites that in sleep mode “the camera does not capture images” and that it is only “in response to detecting motion” that the doorbell “enter[s] a live view mode.” Thus, to be consistent with claim 11, from which claims 13 and 15 ultimately depend, claims 13 and 15 do not require instantaneously capturing video of the detected motion as Patent Owner implicitly argues. Rather, claims 13 and 15 must encompass capturing video only after the doorbell emerges from sleep mode because claim 11 specifies that the doorbell is in a sleep mode in which “the camera does not capture images” and the doorbell is only put into “live view mode in response to detecting motion.” Therefore, we reject Patent Owner’s reasoning.

For reasons discussed in detail above with respect to claim 1 (§ II.D.3), claim 2 (§ II.D.4), and claim 11 (§ II.E.1) and for the reasons given by Petitioner (Pet. 57–60), we are persuaded that Siminoff’s disclosures of the camera being activated by motion by the infrared sensor to record video and sending that video to the remote computing device teach the subject matter of claims 13 and 15.

c) Claims 18–20

Claims 18, 19, and 20 depend from independent claim 11 and recite the same additional subject matter as dependent claims 8, 9, and 10, respectively, which depend from claim 1. Patent Owner advances the same argument for claim 18 as it does for claim 8, namely that Siminoff’s power processor, not the battery, supplies power to the doorbell. PO Resp. 31–33. We disagree with Patent Owner for the reasons given above in § II.D.5 for

claim 8. For the reasons explained with respect to claims 8–10 above in § II.D.5 and for the reasons given by Petitioner (Pet. 60–61), we are persuaded that Siminoff teaches the subject matter recited in claims 18–20.

d) Claim 21

Claim 21 recites, “The system of claim 11, wherein the doorbell receives constant power when the doorbell is in the sleep mode and the live view mode.” Petitioner argues that Siminoff’s disclosure of continually powering the doorbell by wiring the doorbell to an AC circuit of a building teaches this subject matter. Pet. 62 (citing Ex. 1005 ¶ 55; Ex. 1003, 93–94). Patent Owner argues that Siminoff does not teach the recited “constant power” because it does not teach power at the same level for both modes. PO Resp. 33–35. Patent Owner’s argument, therefore, depends on its proposed interpretation of “constant power” as meaning “power at the same level,” which we reject for the reasons given above in § II.B.2.

We are persuaded by Petitioner’s contention that Siminoff’s disclosure of providing power to the doorbell from an AC circuit teaches that “the doorbell receives constant power when the doorbell is in the sleep mode and the live view mode,” as recited in claim 21. *See* Pet. 62; Ex. 1005 ¶ 55 (“Wireless Communication Doorbell 61 may be continually powered or charged by hard-wiring Wireless Communication Doorbell 61 directly to Electrical Wiring 60, such as to an AC or DC electrical circuit.”).

e) Determination of unpatentability of claims 12, 13, 15, and 18–21

For the reasons discussed above, we find Siminoff teaches all of the limitations of claims 12, 13, 15, and 18–21. Having considered the full record developed during trial, we are persuaded by Petitioner’s contentions and evidence, and we determine that Petitioner has proven by a

preponderance of the evidence that claims 12, 13, 15, and 18–21 of the '049 patent are unpatentable under 35 U.S.C. § 103 as obvious over the teachings of Siminoff.

*F. Obviousness over the Combination of Siminoff and Ring.com
(Claim 14)*

Petitioner asserts claim 14 of the '049 patent is unpatentable under 35 U.S.C. § 103 as obvious over the combined teachings of Siminoff and Ring.com. Pet. 9, 62–71.

1. Ring.com

Petitioner asserts that Ring.com (Ex. 1007) “contains web pages captured from <https://ring.com> by the Internet Archive in March 2015” that are prior art under 35 U.S.C. § 102(a)(1). Pet. 10; *see* Ex. 1011 (Affidavit of Christopher Butler). Patent Owner does not challenge the prior art status of Ring.com. *See generally* PO Resp. We are persuaded Petitioner has shown Ring.com qualifies as prior art under 35 U.S.C. § 102(a)(1). *See* Ex. 1011.

Ring.com contains several web pages describing the Ring Video Doorbell. Ex. 1007; *see also* Pet. 63–65; PO Resp. 12.

2. Claim 14

Claim 14 recites, “The system of claim 11, wherein the remote computing device is configurable to receive an input from the user, and the input causes the remote computing device to open a mobile application that visually displays an image of the motion detected by the motion sensor.”

Petitioner cites Siminoff’s disclosure of an application on a smart device for providing a user interface and for displaying videos from the doorbell, and Petitioner argues that “Siminoff’s Smart Device (i) includes an application, (ii) is configured to receive an input from a user, and (iii) receives

notifications and images of motion captured by the camera in the Wireless Communication Doorbell, which are displayed by the application.” Pet. 68–69 (citing, *inter alia*, Ex. 1005 ¶¶ 66, 76, 80, 86, 87; Ex. 1003, 104).

Petitioner contends, “To the extent Siminoff does not explicitly teach that the user input to the Smart Device opens the application that displays the motion-triggered images, a person of ordinary skill in the art would have found it obvious and predictable, as discussed above,” referring to its reasons to combine Siminoff and Ring.com. Pet. 69 (citing Ex. 1003, 104–105).

Petitioner cites Ring.com’s disclosure that “[w]hen motion is detected, the user will instantly receive a mobile push notification, informing them of the activity. If the user decides to open the app, they will be able to access on-demand live footage of the activity.” Pet. 65 (quoting Ex. 1007, 17) (highlighting removed). Petitioner argues that

it would have been obvious to a [person of ordinary skill in the art] to include Ring.com’s notification feature in Siminoff’s Smart Device so that when the Smart Device receives a push notification alerting a user to detected motion (as is already taught by Siminoff), the user could open the application and view the motion. Doing so would be advantageous because it would allow a user of Siminoff’s Smart Device to receive notifications and selectively view detected motion regardless of whether the doorbell app was open at the time of the notification, as taught by Ring.com

Pet. 66 (citing Ex. 1007, 15; Ex. 1003 ¶ 69).

Patent Owner argues that “neither Siminoff nor Ring.com disclose ‘visually display an image of *the motion* detected by the motion sensor’ as required by claim 14” for the same reason argued for claims 13 and 15, namely that in Siminoff and Ring.com, the detected motion is what started

the recording of the video and, therefore, the recorded video does not show the detected motion. PO Resp. 35–37 (citing Ex. 2001 ¶¶ 91–94; Ex. 1005 ¶¶ 46, 81; Ex. 1003, 90, 105; Ex. 1007, 17). Claim 14 depends from claim 11. As discussed above in § II.E.2.b with respect to similar limitations in claims 13 and 15, to be consistent with claim 11, claim 14 must encompass capturing video after the motion is detected because claim 11 specifies that, at the time the motion happens, the doorbell is in a sleep mode in which “the camera does not capture images” and the doorbell is only put into “live view mode in response to detecting motion.” Thus, we reject Patent Owner’s reasoning.

We are persuaded by Petitioner’s contentions and evidence, discussed above, showing how the combination of Siminoff and Ring.com teaches the subject matter recited in claim 14 and showing why a person of ordinary skill in the art would have combined the teachings of Siminoff and Ring.com in manner asserted. *See* Pet. 65–68 (discussing reasons to combine), 68–71 (mapping Siminoff and Ring.com to claim 14). Having considered the full record developed during trial, we are persuaded by Petitioner’s contentions and evidence, and we determine that Petitioner has proven by a preponderance of the evidence that claim 14 of the ’049 patent is unpatentable under 35 U.S.C. § 103 as obvious over the combined teachings of Siminoff and Ring.com.

III. CONCLUSION¹⁰

For the reasons discussed above, we determine Petitioner has proven, by a preponderance of the evidence, that the challenged claims are unpatentable, as summarized in the following table:

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–4, 7–10	103	Siminoff, Almomani	1–4, 7–10	
11–13, 15, 18–21	103	Siminoff	11–13, 15, 18–21	
14	103	Siminoff, Ring.com	14	
Overall Outcome			1–4, 7–15, 18–21	

¹⁰ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this 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. 16654 (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).

IV. ORDER

Accordingly, it is:

ORDERED that claims 1–4, 7–15, and 18–21 of the '049 patent have been shown to be unpatentable; and

FURTHERED 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.

IPR2019-00447
Patent 9,743,049 B2

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