

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PELOTON INTERACTIVE, INC.,
Petitioner,

v.

JOHNSON HEALTH TECH CO., LTD.,
Patent Owner.

IPR2023-01165
Patent 11,227,340 B2

Before JAMES P. CALVE, BART A. GERSTENBLITH, and
JULIET MITCHELL DIRBA, *Administrative Patent Judges*.

GERSTENBLITH, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background

Peloton Interactive, Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting institution of *inter partes* review of claims 1–20 (“the Challenged Claims”) of U.S. Patent No. 11,227,340 B2 (Ex. 1001, “the ’340 patent”). Johnson Health Tech Co., Ltd. (“Patent Owner”) filed a waiver of its preliminary response. Paper 5. Applying the standard set forth in 35 U.S.C. § 314(a), we instituted an *inter partes* review as to all claims and grounds set forth in the Petition. Paper 7 (“Inst. Dec.”).

After institution, Patent Owner filed a Patent Owner Response (Paper 27, “PO Resp.”), Petitioner filed a Reply (Paper 29, “Pet. Reply”), and Patent Owner filed a Sur-reply (Paper 31, “PO Sur-reply”). A consolidated oral hearing was held on September 5, 2024, for this proceeding and two related proceedings between the same parties (IPR2023-01163 and IPR2023-01164) and the transcript is of record. Paper 37 (“Tr.”).

We have jurisdiction pursuant to 35 U.S.C. § 6. This Decision is a Final Written Decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73 as to the patentability of the Challenged Claims. Petitioner bears the burden of proving unpatentability of the Challenged Claims. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). To prevail, Petitioner must prove unpatentability by a preponderance of the evidence. *See* 35 U.S.C. § 316(e) (2018); 37 C.F.R. § 42.1(d) (2021). Having reviewed the arguments and the supporting evidence, we determine that Petitioner has shown, by a preponderance of the evidence, that claims 1–20 of the ’340 patent are unpatentable.

B. Related Proceedings

The parties identify *Johnson Health Tech Co. v. Peloton Interactive, Inc.*, No. 3:22-cv-606 (W.D. Wis.), as a related matter. Pet. 78; Paper 15 (Patent Owner's Updated Mandatory Notices), 2. Petitioner also identifies IPR2023-01163 and IPR2023-01164 in which Petitioner challenges claims of patents related to the '340 patent. Pet. 78.

C. Real Parties in Interest

Petitioner identifies Peloton Interactive, Inc. as a real party in interest. Pet. 78. Patent Owner identifies Johnson Health Tech Co., Ltd. and Johnson Health Tech North America, Inc. as real parties in interest. Paper 15, 2.

D. The Asserted Grounds of Unpatentability and Declaration Evidence

Petitioner challenges the patentability of claims 1–20 of the '340 patent on the following grounds:

Claims Challenged	35 U.S.C. § ¹	Reference(s)/Basis
1–20	103	Morris, ² Ray ³
1–17, 19, 20	103	Ray, AAPA ⁴
1, 4–6, 8, 9, 12	103	Yi ⁵

Pet. 77. Petitioner supports its challenge with a Declaration of R. Lee Rawls (Ex. 1002). Patent Owner supports its arguments with a Declaration of Daniel van der Weide (Ex. 2004). Additionally, Patent Owner filed the deposition transcript of Mr. Rawls (Ex. 2005).

E. The '340 Patent

The '340 patent describes a motor-driven exercise apparatus with an exercise use verification function and verifying method. Ex. 1001, 1:20–23.

¹ The Leahy-Smith America Invents Act (“AIA”) included revisions to 35 U.S.C. § 103 that became effective on March 16, 2013. Because the '340 patent has an effective filing date after March 16, 2013 (*see* Ex. 1001, codes (22), (63)), we apply the current version of § 103 here.

² U.S. Patent Application Publication No. 2010/0160115 A1, published June 24, 2010 (Ex. 1006, “Morris”).

³ U.S. Patent No. 9,785,827 B1, issued Oct. 10, 2017 (Ex. 1004, “Ray”).

⁴ Applicant admitted prior art (“AAPA”) refers to alleged admissions made by the applicant in the Specification of the '340 patent. For the reasons explained below, we do not reach the merits of this contention.

⁵ U.S. Patent Application Publication No. 2009/0176629 A1, published July 9, 2009 (Ex. 1012, “Yi”).

Figures 1 and 2 of the '340 patent are reproduced below.

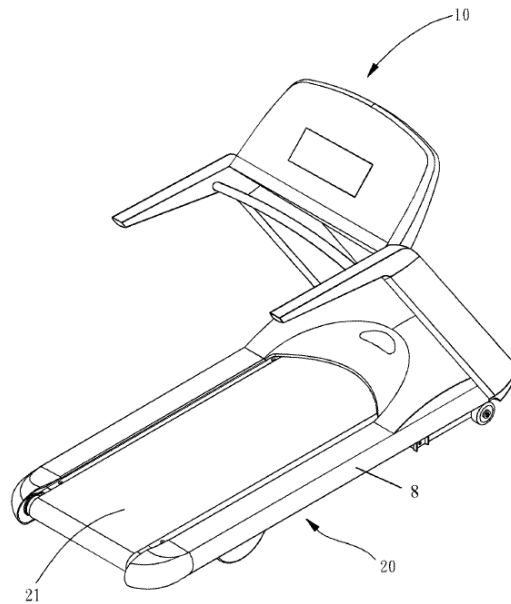


FIG. 1

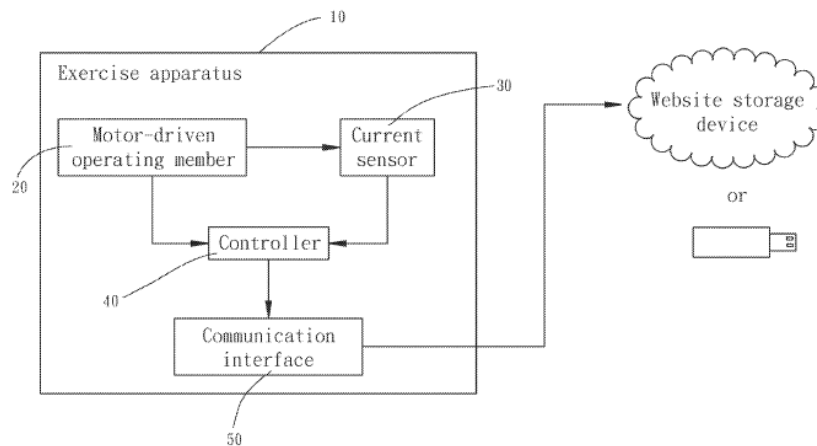


FIG. 2

Figure 1 is a perspective view of exercise apparatus 10 with an exercise use verification function. Ex. 1001, 3:61–62, 4:19–20. Figure 2 “is a schematic drawing of the exercise device and a data storage.” *Id.* at 3:63–64.

The '340 patent explains that exercise apparatus 10 “comprises a base 8, a motor-driven operating member 20, a current sensor 30, a

controller 40, associated with the motor-driven operating member 20 and the current sensor 30, and a communication interface 50 associated with the controller 40.” Ex. 1001, 4:20–25. “Examples of an exercise apparatus can include a motorized treadmill (the embodiment . . . shown in [Figure] 1), a motorized stairclimber, or any other suitable types of motorized exercise equipment.” *Id.* at 4:25–29.

As shown above in Figure 2, controller 40 is in communication with motor-driven operating member 20 and current sensor 30. Ex. 1001, 5:9–11. Additionally, current sensor 30 is in communication with motor-driven operating member 20, and controller 40 is in communication with communication interface 50. *Id.* at 5:11–12. In operation, the ’340 patent explains that the current signal is transmitted from current sensor 30 to controller 40, which monitors a state of the input current. *Id.* at 5:24–27. As current sensor 30 transmits the current signal to controller 40, controller 40 can determine whether a “user is engaging (or continues to engage, or ceases to engage) the motor-driven operating member 20.” *Id.* at 5:27–41.

Figure 3 of the ’340 patent is reproduced below.

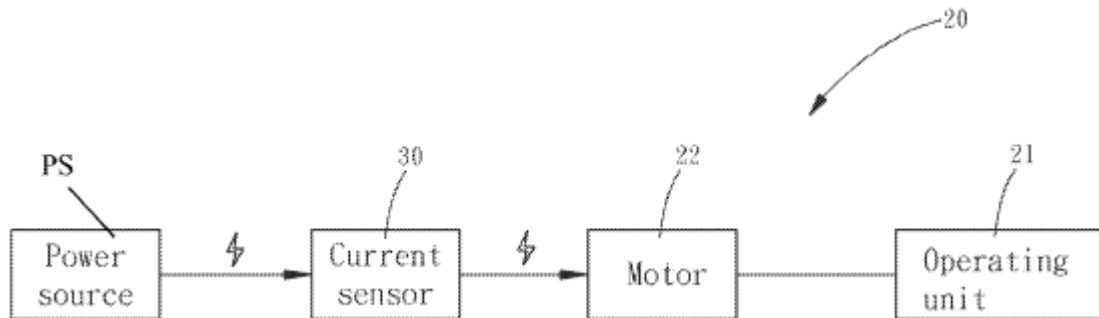


FIG. 3

Figure 3 “is a schematic drawing of a motor-driven operating member and a power source.” Ex. 1001, 3:65–67. The ’340 patent explains that motor-

driven operating member 20 has operating unit 21 (e.g., an endless belt (as shown in Figure 1), or a staircase, etc.) and motor 22. *Id.* at 4:39–41.

Motor 22 is structurally coupled to operating unit 21 and is electrically connected to power source PS, such as an alternating current (AC) power socket, via a wire. *Id.* at 4:41–44. The power source transmits an input current to motor 22, which powers motor 22 to drive operating unit 21. *Id.* at 4:44–46.

The '340 patent explains that, although current sensor 30 is illustrated in the embodiments of Figures 1–3, “in other embodiments other sensors can be implemented. . . . for detecting user engagement of the motor-driven operating member.” Ex. 1001, 6:8–14. Examples of other sensors include

an optical sensor 60 that senses a level of IR radiation . . . , a pressure sensor 70 that senses (or detect[s]) an amount of pressure on the running belt . . . , a speed sensor that senses fluctuations in speed of the operating unit, a thermal sensor that senses a level of heat (i.e., from a human body) on or near the motor-driven operating member, or any other suitable sensor.

Id. at 6:14–20. The '340 patent states that “[i]n each of these cases, the measured parameter can be compared to a default parameter that exists when a user is not engaging the motor-driven operating member. The detail of these sensing devices is well-known and will not be further described here.”

Id. at 6:20–24.

The '340 patent distinguishes “non-validated exercise use data” and “validated exercise use data,” as follows. *See, e.g.*, Ex. 1001, 6:25–45. “If the user is not detected as engaging the motor-driven operating member 20, the controller 40 keeps creating *non-validated* exercise use data and monitoring the state of input current in the wire to the motor 22.” *Id.* at 6:25–28 (emphasis added). But, “[i]n contrast, if the user is detected as

engaging the motor-driven operating member 20, controller 40 records the non-validated exercise use data as *validated* exercise use data.” *Id.* at 6:28–31 (emphasis added).

Additionally, communication interface 50 can transmit validated and/or non-validated exercise use data to users via a display screen on apparatus 10, to third parties (physicians, insurance companies) via Internet interface or port, and to flash drives and website storage devices via wired or wireless connections. *See* Ex. 1001, 6:46–7:17

F. Illustrative Claim

Claims 1, 8, and 13 are the independent claims challenged in this proceeding. Claim 1 is illustrative of the claimed subject matter and is reproduced below with Petitioner’s annotations added for reference (*see* Pet. 15–30):

1. [pre] An exercise apparatus comprising:
 - [a] a base;
 - [b] an operating unit movable relative to the base;
 - [c] a motor coupled to the operating unit;
 - [d] a sensor operable to detect engagement of a user with the operating unit;
 - [e] a controller in communication with the operating unit and the sensor, the controller configured to generate validated exercise use data in response to the sensor detecting engagement of the user with the operating unit and movement of the operating unit relative to the base.

Ex. 1001, 8:30–41.

II. ANALYSIS

A. *Legal Standards – Obviousness*

The U.S. Supreme Court set forth the framework for applying the statutory language of 35 U.S.C. § 103 in *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966):

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.

The Supreme Court explained in *KSR International Co. v. Teleflex Inc.* that

[o]ften, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit.

550 U.S. 398, 418 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” (alteration in original))).

“Whether an ordinarily skilled artisan would have been motivated to modify the teachings of a reference is a question of fact.” *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1327 (Fed. Cir. 2016) (citations omitted).

“[W]here a party argues a skilled artisan would have been motivated to combine references, it must show the artisan ‘would have had a reasonable expectation of success from doing so.’” *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1360–61 (Fed. Cir. 2017) (quoting *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1068–69 (Fed. Cir. 2012)).

B. Level of Ordinary Skill in the Art

Petitioner, supported by Mr. Rawls’ testimony, proposes that a person of ordinary skill in the art at the time of the invention “is a person having: (i) a bachelor’s degree in an exercise related field or mechanical or electrical engineering and (ii) three to five years of industry experience in designing cardiovascular exercise equipment (such as treadmills, bicycles, steppers, ellipticals) or in a similar field.” Pet. 12 (citing Ex. 1002 ¶¶ 31–34). Petitioner also asserts that a person could qualify as an ordinarily skilled artisan with less education but more experience or less experience but more education. *Id.* (citing Ex. 1002 ¶¶ 31–34).

Patent Owner proposes the same level of ordinary skill in the art, except that Patent Owner states that the industry experience would have been “in *analyzing* and/or designing exercise equipment (such as treadmills, bicycles, steppers, ellipticals) or in a similar field.” PO Resp. 15 (emphasis added).

Having considered the record, we adopt Petitioner’s proposed level of skill, as articulated above. We are satisfied that Petitioner’s proposal comports with the level of skill necessary to understand and implement the teachings of the ’340 patent. *Accord* Inst. Dec. 8. Patent Owner’s proposal adds “analyzing” and removes “cardiovascular,” but we agree with

Petitioner that these differences are immaterial to this proceeding. *See* Pet. Reply 29 n.12. Moreover, our analysis in this Decision would remain the same under Patent Owner’s articulation of the level of ordinary skill in the art.

C. Claim Construction

In this *inter partes* review, claims are construed using the same claim construction standard that would be used to construe the claims in a civil action under 35 U.S.C. § 282(b). *See* 37 C.F.R. § 42.100(b) (2020). The claim construction standard includes construing claims in accordance with the ordinary and customary meaning of such claims as understood by one of ordinary skill in the art at the time of the invention. *See id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (en banc). In construing claims in accordance with their ordinary and customary meaning, we take into account the specification and prosecution history. *Phillips*, 415 F.3d at 1315–17.

Additionally, only terms that are in controversy need to be construed, and these need be construed only to the extent necessary to resolve the controversy. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those 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)).

Petitioner “does not believe construction of any term is necessary to resolve the invalidity challenges in this Petition.” Pet. 11 (citing Ex. 1002 ¶¶ 29–30). Petitioner explains that, as of the filing of the Petition, none of the claim terms recited in the ’340 patent have been construed in a prior

proceeding. *Id.* Patent Owner proposes constructions for “exercise use data,” “validated exercise use data,” and “non-validated exercise use data.” PO Resp. 4–13.

Below, we address the construction of the three terms identified by Patent Owner. We determine that it is not necessary to construe any other claim terms or phrases for purposes of this Decision. *See Realtime Data*, 912 F.3d at 1375.

1. Exercise Use Data

The term “exercise use data” appears in each independent claim. Patent Owner contends it means “data that would represent an amount of exercise of the user.” PO Resp. 4. According to Patent Owner, the Specification of the ’340 patent defines this term. *Id.* at 4–5 (citing Ex. 1001,⁶ 1:43–46, 6:33–34, claims 4, 5, 17; Ex. 2004 ¶ 33).

In its briefing, Petitioner disagrees with Patent Owner’s proposed construction, arguing that it is “overly narrow . . . and arbitrarily excludes other forms of ‘exercise use data.’” Pet. Reply 1–2; *see id.* at 1–5 (further contesting Patent Owner’s proposed construction). However, during the oral hearing, Petitioner adopted Patent Owner’s proposal. Tr. 14:12–15:17.

For purposes of this proceeding, we apply Patent Owner’s narrower construction and assume that “exercise use data” is “data that would represent an amount of exercise of the user.” We do not need to further construe this term because Petitioner shows that the Challenged Claims are unpatentable even under Patent Owner’s narrower construction.

⁶ Patent Owner incorrectly cites to the ’340 patent as Exhibit 1010. *See, e.g.*, PO Resp. 1 (referring to the ’340 patent as “Ex.1010”). All citations to the ’340 patent have been corrected to Exhibit 1001.

2. *Validated and Non-Validated Exercise Use Data*

Claim 1 recites “validated exercise use data” as follows: “a controller in communication with the operating unit and the sensor, the controller configured to generate *validated exercise use data* in response to the sensor detecting engagement of the user with the operating unit and movement of the operating unit relative to the base.” Ex. 1001, 8:36–41 (emphasis added). Dependent claim 2 recites “non-validated exercise use data” as follows: “[t]he exercise apparatus of claim 1, wherein the controller is further configured to generate *non-validated exercise use data* in response to the sensor detecting the user not engaged with the operating unit and movement of the operating unit relative to the base.” *Id.* at 8:42–46 (emphasis added).

Patent Owner proposes lengthy constructions for both “validated exercise use data” and “non-validated exercise use data.” PO Resp. 6–13; PO Sur-reply 6–9. Specifically, according to Patent Owner, *validated* exercise use data is “exercise use data that has been determined to have occurred by the controller in response to the sensor detecting a user engaging the moving operating unit/member” (PO Resp. 6), and *non-validated* exercise use data is “exercise use data that has been determined to have occurred by the controller in response to the sensor not detecting a user engaging the moving operating unit/member” (*id.* at 11). In support, Patent Owner argues that the Specification uses the terms in this way. *Id.* at 6–8 (citing Ex. 1001, 2:54–58, 7:46–48, 7:53–55, 8:15–21, claim 1, Fig. 6; Ex. 2004 ¶ 39). Patent Owner also asserts that Petitioner improperly assumes that the claims cover any data generated “while” a sensor detects user engagement, even if that data is not generated “in response to” the

sensor detection. *Id.* at 8–13. In addition, Patent Owner argues that “exercise use data” includes data that is neither “validated” nor “non-validated” by the controller. *Id.* at 12–13.

Petitioner responds that Patent Owner’s proposed constructions improperly import limitations from the surrounding claim language. Pet. Reply 6–7 & n.4, 9 n.6. Petitioner also argues that “exercise use data” must be either “validated” or “non-validated,” as confirmed by the Specification. *Id.* at 9 (citing Ex. 1001, 5:19–23, 6:46–50).

Having considered the parties’ arguments and the evidence of record, we disagree with Patent Owner’s proposed constructions for “validated exercise use data” and “non-validated exercise use data.” We have construed “exercise use data” to be “data that would represent an amount of exercise of the user” (as proposed by Patent Owner) (*see supra* § II.C.1), and the modifiers “validated” and “non-validated” are readily understood. In particular, “non-validated” exercise use data is “exercise use data” that is not “validated” (or not yet “validated”). Our understanding of these terms is further confirmed by the Specification’s description of them. For example, the Specification states that “non-validated exercise use data” can be generated and then, if the user is detected, recorded as “validated exercise use data.” *See, e.g.*, Ex. 1001, 2:60–3:3, 5:42–6:31, 8:15–18. This indicates that “exercise use data” is either “validated” or “non-validated.” *See also id.* at 5:19–23 (communication interface 50 communicates “exercise use data (validated and/or unvalidated)”). The Specification once refers to “exercise use data (*e.g.*, validated and/or unvalidated exercise use data” (*id.* at 6:45–50 (emphasis added))), which indicates that “exercise use data” might also include something else; however, this single use of *exempli gratia* does not

override the plain meaning of these terms and the Specification's other disclosures.

Patent Owner fails to sufficiently support its proposed constructions. Patent Owner asserts that the Specification describes an embodiment that meets its requirements (*see* PO Resp. 6–8, 12–13), but this argument is unavailing. *See Thorner v. Sony Comput. Ent. Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (“It is not enough for a patentee to simply disclose a single embodiment or use a word in the same manner in all embodiments, the patentee must clearly express an intent to redefine the term.” (internal quotation marks omitted)). Patent Owner also relies on the claim phrases in which these terms appear (*see* PO Resp. 6, 10), but this cuts against Patent Owner's position. Patent Owner's proposals are disfavored because they would render part of the phrases superfluous. *See Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006) (“[C]laims are interpreted with an eye toward giving effect to all terms in the claim.”); Pet. Reply 6–7 & n.4, 9 n.6 (arguing the same). Finally, Patent Owner cites to Mr. van der Weide's declaration (*see* PO Resp. 6–13 (citing Ex. 2004 ¶¶ 36–51)); however, we give little weight to Mr. van der Weide's testimony regarding claim construction because he fails to provide sufficient support for his conclusions. *See* Ex. 2004 ¶¶ 36–51; *Phillips*, 415 F.3d at 1318 (Although expert testimony “can be useful . . . to provide background on the technology at issue, [or] to explain how an invention works, . . . conclusory, unsupported assertions by experts as to the definition of a claim term are not useful.”).

To the extent Patent Owner proposes a construction for the phrases rather than the terms (*see* Tr. 48:20–49:3), we reject those proposals as well.

Patent Owner fails to sufficiently explain why we should rewrite the language used in the claim itself, and Patent Owner's proposed constructions add confusion rather than clarity.⁷ In addition, Patent Owner leverages its revised language when attempting to import additional limitations into the claim. For example, Patent Owner appears to argue that the controller in the prior art fails to “validate” or “non-validate” the data (Tr. 47:17–48:6; *see, e.g.*, PO Resp. 22–23; PO Sur-reply 14); however, the claims do not include these requirements (*see, e.g.*, Ex. 1001, 8:37–38 (“the controller configured to generate validated exercise use data”)).

However, we do agree with one aspect of Patent Owner's arguments. Patent Owner argues that “in response to”—which appears immediately following “validated exercise use data” in claim 1 and “non-validated exercise use data” in claim 2—requires more than just concurrence or coincidence. *See* PO Resp. 8–13; Tr. 48:24–49:3 (explaining that the meaning of “in response to” is “the point of emphasis” in Patent Owner's proposed constructions). We agree that “in response to” requires some degree of causality, not just concurrence. *See also* Tr. 70:15–71:5 (Petitioner agreeing with this point and asserting the proposed combination meets this requirement). For example, a flowchart can show that an action occurs “in response to” an event by showing an arrow from an event to the action. *See* Ex. 1001, 7:46–8:3, Fig. 6 (step 116 occurs “in response to”

⁷ Patent Owner's proposed constructions are unclear, so we do not include an alternative analysis that expressly applies them to the proposed combination. But it appears that our substantive analysis would remain unchanged even under the constructions proposed by Patent Owner.

determining that the user was not detected at step 112, and step 128 occurs “in response to” determining that the user was detected at step 112).

D. Ground 1: Obviousness over Morris and Ray

Petitioner asserts the combination of Morris and Ray would have rendered the subject matter of claims 1–20 obvious to one of ordinary skill in the art at the time of the invention. Pet. 12–52. Patent Owner challenges several, but not all, of Petitioner’s contentions as discussed further below. *See, e.g.*, PO Resp. 16–39.

1. Scope and Content of the Prior Art

a. Morris (Ex. 1006)

Morris is directed to an exercise machine with user detection features, such as treadmill 100 shown in Figure 1, reproduced below. Ex. 1006, code (57).

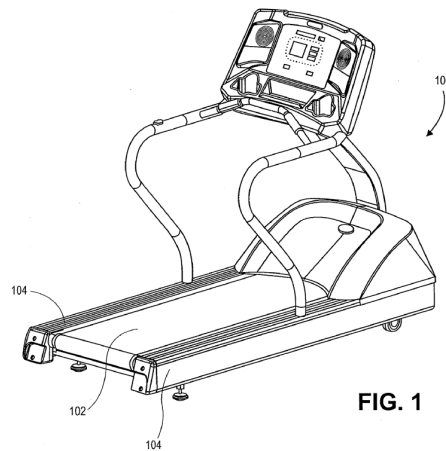


Figure 1 shows treadmill 100 comprising base 104 and treadmill belt 102 that glides over a floating deck surface of base 104 and that is driven by a belt driving mechanism (not shown). *Id.* ¶¶ 25, 26.

The user detection mechanism is incorporated into treadmill base 200 as illustrated in Figure 2, which is reproduced below.

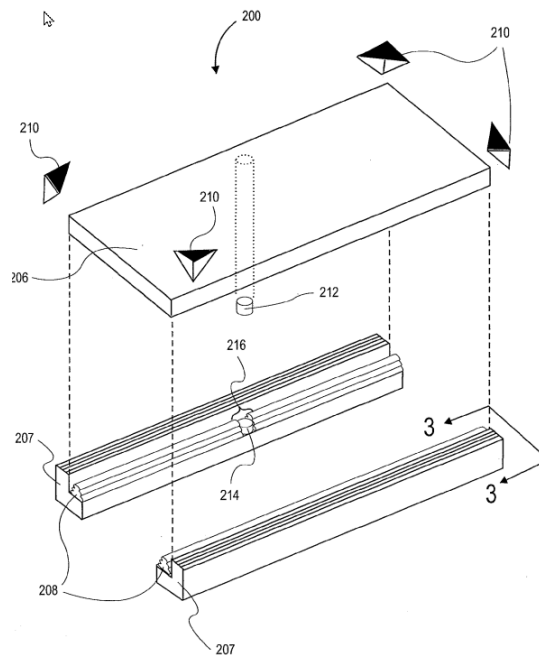


FIG. 2

Figure 2 illustrates a user detection mechanism comprising magnets 212 attached to or embedded in deck 206 to interact with induction coil 214 fixed along frame element 207 within compressible cushioning supports 208 that support deck 206. Ex. 1006 ¶ 27. As deck 206 moves due to a user's footfalls or weight shifts, corresponding movement of magnets 212 induces a current in induction coil 214, and the signal is transmitted by wire 311 to a processor for translation as shown in Figures 3A and 3B reproduced below.

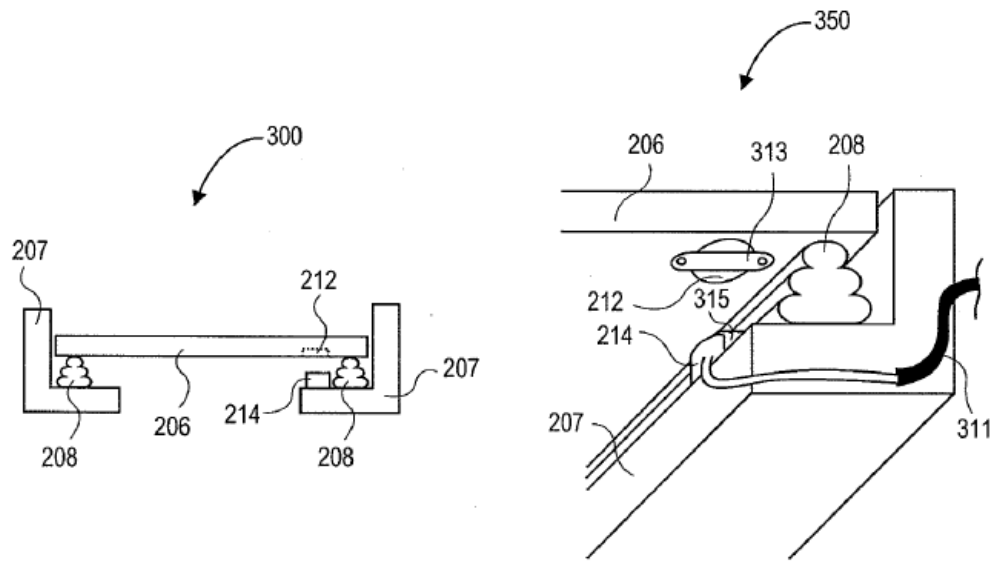


FIG. 3A

FIG. 3B

Figures 3A and 3B illustrate a user detection system with magnets 212 affixed to deck 206 to move therewith relative to induction coil 214 due to a user's footfalls or weight shifts. Movement of magnets 212 relative to coils 214 induces signals that are sent by wire 311 to a processor. *Id.* ¶¶ 27, 31. The processor distinguishes these large signals from “baseline” signals caused by slight vibrations in the treadmill due to the electric motor driving the belt. *Id.* ¶ 31. Magnetic and optical sensors may be used. *Id.* ¶ 33.

Inductance coil 214 communicates with translator board 518, which is part of processing system 500 shown in Figure 6 and reproduced below.

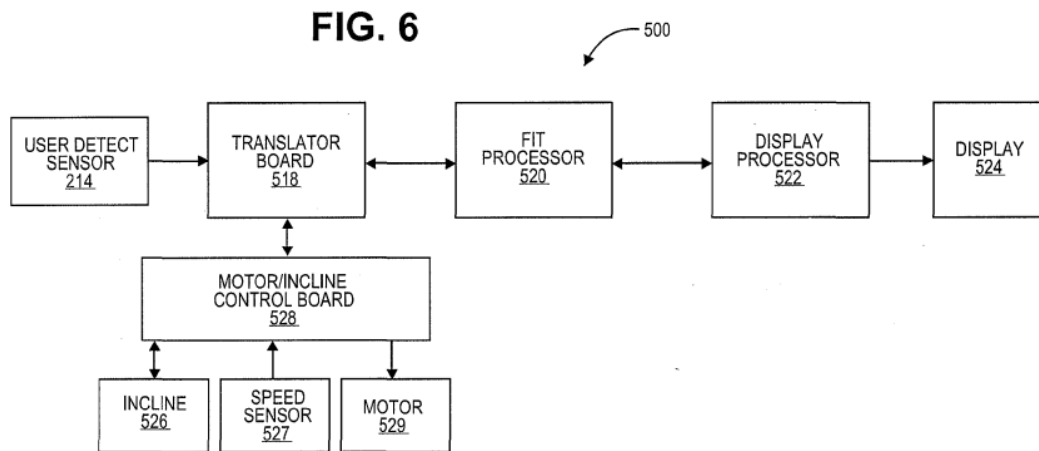


Figure 6 is a block diagram of treadmill information processing system 500 that comprises user detection sensors 214, translator board 518, FIT processor 520, display processor 522, display 524, motor/incline control board 528, incline controller 526, speed sensor 527, and motor driver 529. Ex. 1006 ¶¶ 32, 33. Translator board 518 interprets signals received from inductance coil 214 and forwards them to FIT processor 520, which uses this indication of a user's presence or absence to control a workout program. *Id.* ¶ 36. FIT processor 520 may communicate the user's presence to display processor 522, which may command display 524 to display indications of the user's presence or absence. *Id.* FIT processor 520 manages the workout program, e.g., duration, distance, incline, and intensity. *Id.* ¶ 35. Signal processors include translator board 518, FIT processor 520, and display processor 522. *Id.* ¶ 34. User cadence, footfall force, pace, heart rate, incline, distance, and program profile may be output as exercise information and feedback on the display panel. *Id.* ¶¶ 50–53, Fig. 11.

b. Ray (Ex. 1004)

Ray is directed to a process to aid in motivation of personal fitness, including health monitoring and validation of a user. Ex. 1004, code (54).

To verify a user's identity and exercise data, Ray detects the user's movement on treadmill exercise machine 40 with camera 32 when exercise machine 40 is moving and exercise data 24 is being produced by exercise machine 40. Ex. 1004, 6:43–7:10, 13:20–30, 14:31–46. Figure 1 of Ray is reproduced below to illustrate this arrangement.

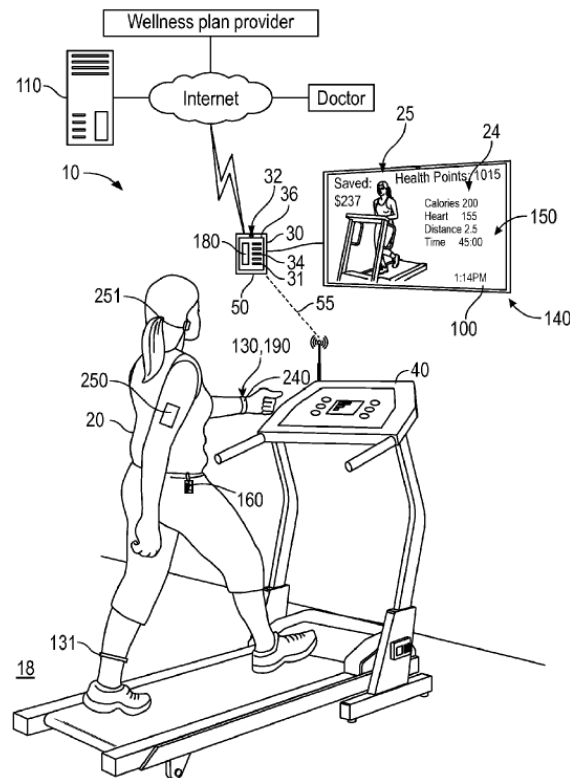


FIG. 1

Figure 1 shows a user exercising on exercise machine 40 with camera 32 of electronic device 30 recording the exercise data. *Id.* at 13:7–30. When movement is detected by camera 32 (e.g., the user's shoulders moving up and down) and the treadmill is moving (by indicating movement at interface 55 with electronic device 30), camera 32 records still or video images of the user exercising and/or produces a live feed. *Id.* at 6:43–56, 13:20–24, 14:6–14. As long as the user continues to exercise on exercise

machine 40, camera 32 captures the user's image at pre-set intervals. *Id.* at 6:49–60, 14:31–40.

The system displays exercise data 24 (including time 140 and duration 150) and motivational image 25 (which may be a thinner image of the user based on the intensity or duration of the user's exercises). Ex. 1004, 5:41–58, 13:50–67. The user's identity, motivational image, and exercise data may be sent as a live feed over the Internet to a doctor, a wellness manager, or remote server 110. *Id.* at 5:41–51, 6:63–7:8, 13:7–30, 13:65–67.

2. Motivation to Combine and Reasonable Expectation of Success

Petitioner contends that a person of ordinary skill in the art would have been motivated to combine Morris and Ray by adding several of Ray's features to Morris' treadmill (including Ray's camera, software instructions for validating user exercise data, its functionality of displaying a motivational image, and its ability to transmit exercise data to a remote location), and that the ordinarily skilled artisan would have had a reasonable expectation of success in achieving the proposed combination. Pet. 12–15.

Petitioner asserts that an ordinarily skilled artisan would have been motivated to combine Morris and Ray because they provide complementary teachings and address similar objectives. Pet. 12 (citing Ex. 1004, Abstr., 5:41–48, 8:22–26, 11:56–61, 13:20–30; Ex. 1006 ¶¶ 6, 25, 35, Abstr.; Ex. 1002 ¶¶ 134–137). Petitioner also asserts that Morris contemplates use of an optical sensor, provides exercise data and “a human analog display that mimic[s] bouncing motion of the user,” and includes a signal processing and display system with the necessary capabilities to implement the

combination. *Id.* at 13–14 (citing Ex. 1002 ¶¶ 138–141; Ex. 1006 ¶¶ 32–36, 50, 56–58, claims 29–37, Figs. 6, 11–12C); *see also id.* at 20 (asserting that “including multiple sensors in treadmills was a routine and well-known task”) (citing Ex. 1002 ¶¶ 152–155). Petitioner further asserts that Ray expressly teaches that “its user validation/motivation technology could be ‘easily and affordably merged’ into a treadmill.” *Id.* at 14 (quoting Ex. 1004, 9:55–57) (citing Ex. 1002 ¶¶ 142–143). Petitioner also contends that an ordinarily skilled artisan would have been motivated to make the proposed combination because it would have improved Morris’ treadmill to add both “Ray’s motivational image that showed a thinner image of the user as the intensity and duration of exercise increased” and Ray’s ability “to share the exercise data with a remote location.” *Id.* at 14–15 (citing Ex. 1004, 7:11–22, 11:55–59, 13:50–57; Ex. 1006 ¶ 50; Ex. 1002 ¶ 144); *see also id.* at 12 (arguing that detection of a user’s presence could provide benefits, including motivation (citing Ex. 1004, 8:22–26, 11:56–61; Ex. 1006 ¶ 25)).

Patent Owner does not dispute these contentions.⁸ *See generally* PO Resp.

We find that Petitioner has established that an ordinarily skilled artisan would have been motivated to improve Morris’ treadmill by adding Ray’s camera, software instructions for validating user exercise data, its functionality of displaying a motivational image, and its ability to transmit

⁸ By not challenging Petitioner’s contentions as to motivation to combine and reasonable expectation of success, we also find that Patent Owner has waived any argument contesting these contentions. *See* Paper 8 (Scheduling Order), 9 (“**Patent Owner is cautioned that any arguments not raised in the response may be deemed waived.**”).

exercise data to a remote location, and that the ordinarily skilled artisan would have had a reasonable expectation of success in achieving the combination proposed for the reasons explained by Petitioner, as set forth above.

3. *Independent Claim 1*⁹

a. *1[pre]*

The preamble of claim 1 recites “[a]n exercise apparatus comprising.” Ex. 1001, 8:30. Without taking a position on whether the preamble of claim 1 is limiting, Petitioner contends “Morris disclose[s] an ‘exercise machine[] having user detection features’ . . . , where the exercise machine could be a treadmill.” Pet. 15 (alteration in original) (quoting Ex. 1006 ¶ 2) (citing Ex. 1006 ¶ 7, claim 29, code (57), Fig. 1).

Patent Owner does not challenge Petitioner’s argument and evidence directed to the preamble of claim 1. *See generally* PO Resp.

We find Petitioner’s arguments persuasive as to the preamble of claim 1 and supported on the record before us for the reasons explained by Petitioner.¹⁰

⁹ Patent Owner argues that “Petitioner fails to show that the Morris and Ray combination teaches or suggests element 1[e].” PO Resp. 16. Patent Owner does not challenge Petitioner’s argument or evidence directed to any of the other elements of claim 1. *See id.* at 16–23. We find that Patent Owner has waived any argument contesting Petitioner’s contentions directed to the other elements of claim 1. *See* Paper 8 (Scheduling Order), 9.

¹⁰ We need not determine whether the preamble of claim 1 is limiting because we find, on the present record, that Petitioner has shown it is taught by Morris.

b. Element 1[a]

Element 1[a] recites “a base.” Ex. 1001, 8:31. Petitioner asserts Morris’ Figure 1 shows a treadmill that includes base 104. Pet. 15. Petitioner contends base 104 includes “[d]eck 206 . . . generally made of a sturdy material that can withstand the forceful impacts of runners and other users.” *Id.* at 15–16 (quoting Ex. 1006 ¶ 27) (citing Ex. 1006, Fig. 2). Petitioner contends Morris’ treadmill belt is positioned above deck 206, as reflected in Figure 2. *Id.* at 16 (citing Ex. 1006 ¶ 27, Fig. 2; Ex. 1002 ¶¶ 145–146).

Patent Owner does not challenge Petitioner’s argument and evidence directed to element 1[a]. *See generally* PO Resp.

We find Petitioner’s arguments persuasive as to element 1[a] and supported on the record before us for the reasons explained by Petitioner.

c. Element 1[b]

Element 1[b] recites “an operating unit movable relative to the base.” Ex. 1001, 8:32. Petitioner asserts the ’340 patent describes an endless belt as an example of an operating member and Morris teaches motor-driven, endless belt 102. Pet. 16 (citing Ex. 1001, 3:4–7, 4:28–35; Ex. 1006 ¶ 25, Fig. 1). Petitioner also points to Morris’ disclosure that its endless belt moves via an electric motor. *Id.* (citing Ex. 1006 ¶ 25). Additionally, Petitioner asserts Morris’ belt is positioned above deck 206 and moves in relation to the stationary deck. *Id.* (citing Ex. 1006 ¶ 27; Ex. 1002 ¶¶ 147–148).

Patent Owner does not challenge Petitioner’s argument and evidence directed to element 1[b]. *See generally* PO Resp.

We find Petitioner’s arguments persuasive as to element 1[b] and supported on the record before us for the reasons explained by Petitioner.

d. Element 1[c]

Element 1[c] recites “a motor coupled to the operating unit.” Ex. 1001, 8:33. Petitioner asserts “Morris disclose[s] a motor coupled to its belt (operating unit) by explaining that ‘slight vibrations in the treadmill caused merely by *electric motor driving the belt* may create small, “baseline” signals.’” Pet. 17 (quoting Ex. 1006 ¶ 31). Petitioner contends Morris also teaches “a ‘motor feedback system [for] monitoring the incline and speed of a treadmill,’ and drivers for its motor, including motor/incline control board 528 and motor driver 529, as shown in Figure 6.” *Id.* (alteration in original) (quoting Ex. 1006 ¶ 33) (citing Ex. 1006 ¶ 32; Ex. 1002 ¶ 148).

Patent Owner does not challenge Petitioner’s argument and evidence directed to element 1[c]. *See generally* PO Resp.

We find Petitioner’s arguments persuasive as to element 1[c] and supported on the record before us for the reasons explained by Petitioner.

e. Element 1[d]

Element 1[d] recites “a sensor operable to detect engagement of a user with the operating unit.” Ex. 1001, 8:34–35. Petitioner contends Morris describes a user detect sensor. Pet. 18 (citing Ex. 1006 ¶ 33). In particular, Petitioner points to Morris’ reluctance sensor that includes magnet 212 and induction coil 214. *Id.* (citing Ex. 1006 ¶ 27, Figs. 3A–B). Petitioner asserts that, “[a]s the deck move[s] from a user’s footfalls, the magnet’s 212 corresponding movements induce[] a current in the induction coil 214 that [i]s communicated through wire 311 to a processor, where the signals [a]re

used to determine whether a user [i]s present.” *Id.* at 19 (citing Ex. 1006 ¶¶ 27, 31; Ex. 1002 ¶¶ 150–151).

Additionally, Petitioner asserts Ray discloses an optical sensor (i.e., a camera) and associated data processor that are connected to the exercise machine and can be implemented as part of the treadmill to record still or video images and produce a live feed of user 20 when movement is detected by the camera and exercise data 24 is produced by exercise machine 40. Pet. 19 (citing Ex. 1004, 9:55–57, 10:36–50, 10:59–64, 13:20–24, 14:34–40, claim 1). Petitioner contends Ray’s camera detects a user’s presence on the moving belt by detecting “movement . . . (such as the user’s shoulders moving up and down),” and the camera will stop recording images if the user stops exercising. *Id.* at 19–20 (citing Ex. 1004, 6:53–56, 14:6–14, 15:55–65).

In the combination, Petitioner explains that “Ray’s camera and its analysis software would be combined with Morris’ treadmill and augment the reluctance sensor, which provided detection signals indicative of the force exerted by the user on the treadmill as the user was walking or running on the treadmill.” Pet. 20. Petitioner asserts the reluctance sensor data “would be used to accurately and realistically modify the user’s virtual image based on the detected footfalls.” *Id.* Additionally, Petitioner reiterates that one of ordinary skill in the art would have had a reasonable expectation of success in achieving the combination “because including multiple sensors in treadmills was a routine and well-known task” and “using multiple sensors or sensor types is consistent with the ’340 patent’s description of a sensor for detecting engagement of the user with the

treadmill.” *Id.* (citing Ex. 1001, 6:8–20, 7:46–51, Fig. 5; Ex. 1002 ¶¶ 152–155).

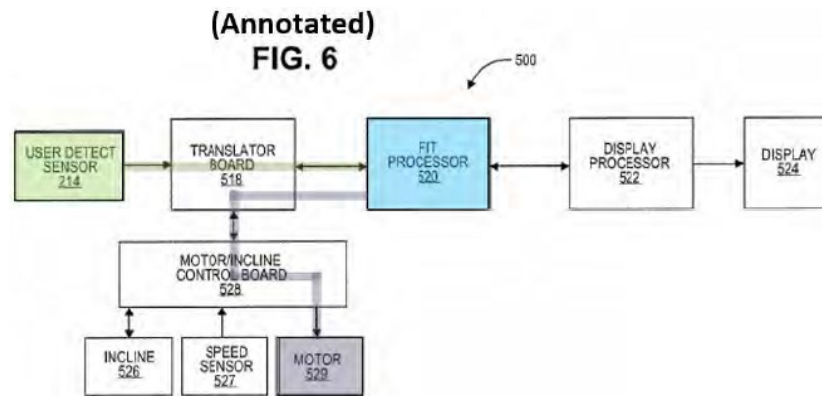
Patent Owner does not challenge Petitioner’s argument and evidence directed to element 1[d]. *See generally* PO Resp.

We find Petitioner’s arguments persuasive as to element 1[d] and supported on the record before us for the reasons explained by Petitioner. Specifically, the combination includes both Morris’ reluctance sensor (i.e., magnet 212 and inductance coil 214) and Ray’s camera, and these sensors operate to detect engagement of a user with the operating unit (i.e., the treadmill’s belt). Ex. 1006 ¶¶ 27, 31, 33; Ex. 1004, 13:20–24, 14:6–14; *see* Ex. 1002 ¶ 154.

f. Element 1[e]

Element 1[e] recites “a controller in communication with the operating unit and the sensor, the controller configured to generate validated exercise use data in response to the sensor detecting engagement of the user with the operating unit and movement of the operating unit relative to the base.” Ex. 1001, 8:36–41. Petitioner asserts the combination of Morris and Ray satisfies element 1[e]. Pet. 20–30.

Petitioner first addresses the recitation of a “controller” in element 1[e]. Pet. 20–22. Petitioner contends Morris discloses a controller “in the form of an FIT (fitness) processor 520 that was in communication with the motor that drove the belt (‘operating unit’) and with the user detect sensor (‘sensor’),” which Petitioner illustrates by annotating Morris’ Figure 6, as shown below. *Id.* at 21.



Id. Petitioner annotates Morris’ Figure 6, which shows “a block diagram of an embodiment of an exemplary treadmill system . . . , including user detection electronics” (Ex. 1006 ¶ 17), to color user detect sensor 214 (green), FIT processor 520 (blue), and motor 529 (gray). Pet. 21.

Alternatively, Petitioner contends

the combination of translator board 518, FIT processor 520, and display processor 522, or the combination of translator board 518 and FIT processor 520, could form the claimed “controller” because Morris describe[s] that while those components could be implemented as “physically separate processors and/or electronic boards, *one or more [of the translator board 518, FIT processor 520, and display processor 522] [could] be combined within single processor.*”

Pet. 21 (alterations in original) (quoting Ex. 1006 ¶ 35).

Further, Petitioner asserts Morris’ “processor(s) communicate[s] with the user detect sensor” and also communicates with the treadmill belt (operating unit). Pet. 22 (citing Ex. 1006 ¶ 36, claims 24, 32; Ex. 1002 ¶ 159).

Next, Petitioner addresses the recitation of “generat[ing] validated exercise use data” in element 1[e]. Petitioner asserts Morris and Ray teach this aspect of element 1[e]. Pet. 24; *see id.* at 24–30. Petitioner contends Morris teaches that exercise equipment may present information to a user via

a display, which can show exercise use data including “*pace*, heart rate (when available), incline, *distance*, program profile, and/or the like.” *Id.* at 24 (quoting Ex. 1006 ¶ 51) (citing Ex. 1006 ¶ 50, Fig. 11). Petitioner also asserts Morris teaches generating and displaying exercise use data such as “footfall force” and “a user’s cadence.” *Id.* at 25 (emphasis omitted) (citing Ex. 1006 ¶ 53, Fig. 11). Petitioner provides the following annotated version of Morris’ Figure 11:

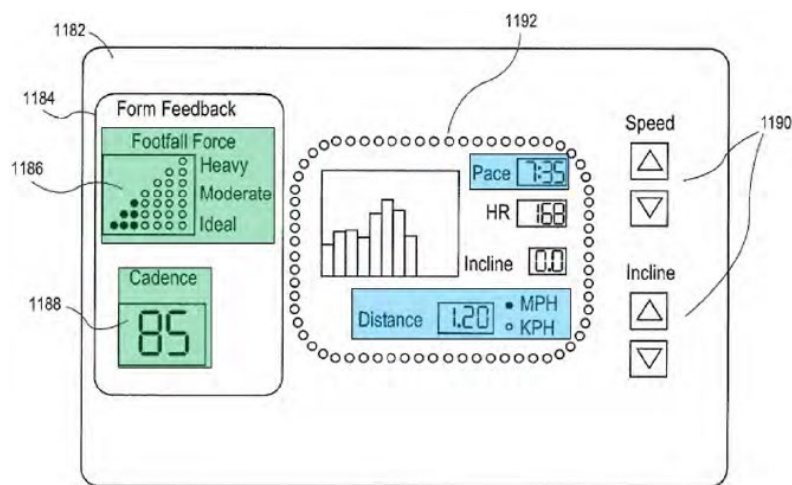


FIG. 11
(Annotated)

Id. at 24. Petitioner annotates Morris’ Figure 11, which “illustrates a sample display panel for providing user technique evaluation to a user” (Ex. 1006 ¶ 23), to color the displayed pace and distance (blue) and the displayed footfall force and cadence (green). *Id.*

Petitioner also points to Morris’ teaching—that “user detection sensor readings may be evaluated more often while a treadmill belt is moving than while the treadmill is not in use”—to assert one of ordinary skill in the art would have understood “that the exercise use data obtained from the sensor readings were generated while the belt (operating unit) was moving, and reported out to the treadmill screen.” Pet. 25 (citing Ex. 1006 ¶ 40; Ex. 1002

¶¶ 164–166); *see id.* (also asserting that pace and user cadence are tied to time spent or distance traveled while a user is exercising on a moving treadmill, which indicates Morris generates and reports validated exercise use data while the user is engaged with the treadmill).

Next, Petitioner addresses Ray’s teaching regarding “validated exercise use data,” as recited in element 1[e]. Pet. 25; *see id.* at 25–30. Petitioner asserts Ray makes it “explicit that validated exercise use data would only be produced while the user was being detected exercising” because Ray “disclose[s] generating, transmitting and displaying exercise data 24, such as calories, heart rate, distance and time.” *Id.* (citing Ex. 1004, 5:46–48, 10:64–67, 13:31–36, Fig. 1). Petitioner also points to Ray’s virtual image of the user, which Petitioner asserts “was generated and displayed in real time on a screen when the user used the treadmill” and “became ‘thinner, healthier, and more aesthetically pleasing.’” *Id.* at 26 (citing Ex. 1004, 4:66–5:11, 5:41–46, Fig. 1); *see id.* (also noting Ray’s displayed image was thinned based on “the intensity, speed and/or duration of the user’s workout” (citing Ex. 1004, code (57), 5:44–46, 5:23–29, 10:59–67; Ex. 1002 ¶¶ 167–168)).

Petitioner provides the following annotated version of Ray’s Figure 1:

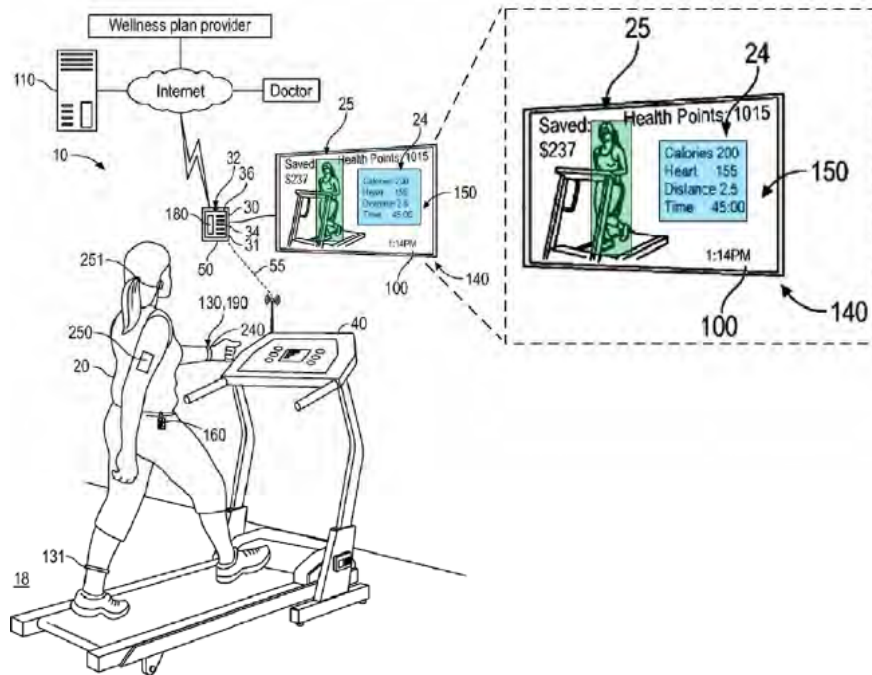


FIG. 1 (Annotated and Display Area Enlarged)

Pet. 27. Petitioner annotates Ray’s Figure 1, “a perspective view” of one of Ray’s embodiments (Ex. 1004, 12:26–27), to color the displayed virtual image of the user (green) and displayed calories, heart rate, distance, and time (blue). *Id.* Petitioner contends Ray teaches that “***as long as the treadmill is moving*** the camera will operate to take [a user’s] real-time image while exercising.” *Id.* at 28 (quoting Ex. 1004, 6:54–56).

Petitioner thus contends it would have been obvious to one of ordinary skill in the art that (1) “the user’s image on a treadmill . . . would be generated when the treadmill’s belt (operating unit) was moving” and (2) “Ray’s other types of exercise information, such as time and distance, would be generated while the treadmill belt (operating unit) was moving and the exercising user was being detected.” Pet. 28 (citing Ex. 1004, 13:24–30, 5:45–48; Ex. 1002 ¶¶ 167–170).

Additionally, Petitioner contends “the controller would have been configured to detect the user’s presence using a camera (sensor) as described in Ray.” Pet. 28. Thus, Petitioner asserts one of ordinary skill in the art would have understood that “Ray’s exercise use data (motivational image and other exercise data) was validated exercise use data because it was produced in response to detecting an exercising user on the treadmill and the movement of the belt.” *Id.* at 28–29. Petitioner contends Ray teaches that the validated exercise use data could be reported to a doctor or wellness trainer in real time (*id.* at 29 (citing Ex. 1004, 5:49–51, 7:4–10, Figs. 1–3)) or stored on a remote server (*id.* (citing Ex. 1004, 3:47–51, 7:4–10, 8:1–8, Figs. 1–3; Ex. 1002 ¶ 166)). Petitioner also asserts once a user stopped exercising, “the generation and reporting of the user’s image would have [also] stopped.” *Id.* (citing Ex. 1004, 6:55–57).

Further, Petitioner points to Ray’s teaching that “[u]sing the ***validation process*** of the invention, the patient’s identity ***and exercise routine [were] confirmed*** simultaneously.” Pet. 29 (quoting Ex. 1004, 8:26–28) (citing Ex. 1004, 13:24–30). Thus, Petitioner argues Ray provides “an additional level of validation of the exercise use data based on validation of the identity of the user.” *Id.* (citing Ex. 1002 ¶¶ 167, 171).

Turning to the combination, Petitioner asserts “Morris and Ray both describe[] generating data related to the exercise session while the user was on the treadmill; the data included distance, pace, footfall force, cadence, time, and the user’s virtual image that morphed based on exercise intensity/duration.” Pet. 29. Petitioner contends “[a]ny one or combination of them can be construed as exercise use data.” *Id.* Thus, Petitioner asserts “generation and reporting of the user’s thinning image, and stopping the

reporting once the user could not be detected, satisfie[s] limitation 1[e].” *Id.* (citing Ex. 1002 ¶ 172).

Petitioner also contends one of ordinary skill in the art would have found it obvious that “other exercise use data, such as pace, footfall force, cadence, distance and/or time would also be reported while the user was exercising on the treadmill, and at least some of those additional exercise use data would not be reported when the user was no longer exercising” because “pace, footfall force and cadence could only be generated when the user was walking or running on the treadmill.” Pet. 29–30 (citing Ex. 1002 ¶ 173).

Patent Owner asserts that Morris and Ray each fail to teach or suggest “validated exercise use data.” PO Resp. 16–23. As for Morris, Patent Owner argues that Petitioner fails to show that “Morris’[] controller validates distance or time *in response* to the sensor detecting engagement by the user with the moving operating unit” (belt). *Id.* at 18 (citing Ex. 2004 ¶ 60). Patent Owner also argues that Morris’ other data (e.g., pace, footfall force, and cadence) fails to meet the claim’s requirements because: (1) none of this data represents an amount of exercise, and (2) Petitioner fails to show that the controller validates this data in response to the sensor detecting user engagement. *Id.* at 16–18 (citing Ex. 2004 ¶¶ 57–59; Ex. 2005, 59:17–60:11). As for Ray, Patent Owner argues that Ray’s virtual image is not “exercise use data” because it does not represent an amount of exercise, explaining that “morphing the virtual image based on underlying data that may be ‘exercise use data’ does not make the virtual image ‘exercise use data.’” *Id.* at 20–21 (citing Ex. 2004 ¶¶ 61–65; Ex. 2005, 22:6–7, 22:12–24:14, 33:8–22). Patent Owner further argues that Ray “says nothing about the controller determining the validity of time, distance, or calories *in*

response to a sensor not detecting a user engaged with the moving operating unit,” but instead accumulates this data regardless of whether the user is on the treadmill. *Id.* at 22 (citing Ex. 2004 ¶ 67; Ex. 2005, 32:4–7, 38:19–39:2). Patent Owner also argues that Ray’s heart rate data is not “exercise use data” because it does not represent an *amount* of exercise. *Id.* at 19 (citing Ex. 2004 ¶ 62).

Having considered the parties’ arguments and the evidence of record, we are persuaded that the Morris-Ray combination teaches (or at least suggests) element 1[e]. In particular, for the reasons explained below, we find that Ray teaches (or at least suggests) generating a motivational image, time, and distance (which each teach “exercise use data”)¹¹ in response to detecting a user engaging with a moving treadmill belt. *See* Pet. 25–30. In addition, we are persuaded by Petitioner’s undisputed contentions that an ordinarily skilled artisan would have been motivated to incorporate these aspects of Ray into Morris with a reasonable expectation of success. *See supra* § II.D.2 (addressing rationale to combine and reasonable expectation of success); Pet. 28–30.

Ray teaches that its system “validate[s] the user’s identity and exercise achieved” and displays a “motivational image, such as a thinner

¹¹ We construe “exercise use data” as “data that would represent an amount of exercise of the user.” *Supra* § II.C.1. The parties agree that time and distance are each “exercise use data” (*see* PO Resp. 4–5 (noting that “[t]he independent and dependent claims also specify ‘time’ and ‘distance’ as ‘exercise use data’”); Pet. Reply 11 (“Even if [Patent Owner’s] construction that limits exercise use data to time and distance is accepted, Morris and Ray describe other exercise data, i.e., distance and time.”)), and we find that Ray’s motivational image is also “exercise use data,” as explained in more detail later in this section.

representation of the user.” Ex. 1004, Abstr. To that end, Ray includes a camera that detects if a user is exercising and, if so, captures images of the user. *See, e.g., id.* at 6:53–56 (“[A]s long as the treadmill is moving the camera will operate to take their real time image while exercising. If the user stops exercising, the camera will no longer record images.”), 14:6–14 (“[M]ovement is sensed by the camera 32 (such as the user’s shoulders moving up and down), resulting in the set of instructions causing the camera 32 to periodically take a photo.”), 14:35–46 (“[A]s long as the user 20 continues exercising, the camera 32 will continue to capture the user’s image”). Ray uses the image captured by the camera in at least two ways. First, Ray uses the image (and the user’s exercise information) to generate a motivational image. *See, e.g., id.* at Abstr. (“[U]pon detection of movement by the camera, [Ray’s device] is adapted to display the motivational image”), 13:50–61 (explaining that the motivational image is determined using the camera’s image and “the speed or duration of the detection of movement of the user 20 by the camera 32”). Second, Ray uses the image to validate both the user’s identity and the amount of exercise actually performed by the user. *See, e.g., id.* at 6:43–46 (noting that using the camera allows “the user’s identification and method of exercise [to be] confirmed during the exercise routine”), 6:63–66 (“This information can be sent to someone in the medical industry or wellness manager to confirm the user’s amount of exercise and validating the user’s identity.”), 8:26–28 (“Using the validation process of the invention, the [user’s] identity and exercise routine are confirmed simultaneously.”). Indeed, Ray notes that its system satisfies a need to “validat[e] the identity of the user and the exercise performed” in order to prevent a user from fraudulently claiming wellness

program benefits and health insurance discounts for exercise that was not actually performed. *Id.* at 9:31–47; *see also id.* at 3:37–42.¹²

Based on these disclosures, we find that Ray teaches generating a motivational image in response to detecting a user exercising on a moving treadmill belt. *See, e.g.,* Ex. 1004, Abstr., 13:50–67, 17:62–18:19 (claim 1). In addition, we find that Ray generates the time and distance associated with the exercise actually performed by a user (*see, e.g., id.* at 5:46–48, 6:43–66, 8:26–28), and this teaches generating “validated exercise use data” in response to detecting a user exercising on a moving treadmill belt. *See also, e.g., id.* at Abstr. (Ray’s system “*validate[s]* the user’s identity and *exercise achieved*” (emphasis added)), 13:27–30 (transmitting “the time 140 and duration 150 of the exercise performed by the user”). Although Ray does not state *in haec verba* that its system generates time and distance in response to detecting the user exercising on the belt, we are persuaded that an ordinarily skilled artisan would have understood Ray in this manner.¹³ *See* Ex. 1002 ¶¶ 167–171. Moreover, even if Ray does not teach these claimed aspects, it suggests them—Ray repeatedly states that it uses the image taken by its camera to validate the exercise actually performed by the user, and it validates, displays and transmits the amount of exercise performed by the user. *See, e.g.,* Ex. 1004, 6:43–7:10, 8:26–28, 13:27–30; *see also* Ex. 1002 ¶ 169; Ex. 1004, 9:40–47 (stating that the invention

¹² Incidentally, the ’340 patent also seeks to prevent a user from submitting “faked” exercise data to insurance companies. Ex. 1001, 2:14–26 (describing, in the background, faked exercise data), 2:36–43 (describing a benefit of the verification function of the ’340 patent and ability of “a user . . . [to] demonstrate his (or her) exercise habit to their insurance company”).

¹³ We do not rely on inherency in this Decision.

“validat[es] the identity of the user and the exercise performed” to solve the problem of people fraudulently submitting erroneous exercise data).

Patent Owner’s contrary arguments are unavailing. *See* PO Resp. 19–23; PO Sur-reply 6–8, 11–14. First, Patent Owner argues that Ray’s motivational image “is not ‘exercise use data’ because it . . . does not represent an **amount** of exercise.” PO Resp. 19; *see also id.* at 5–6, 19–22; PO Sur-reply 6–7. We disagree.¹⁴ Ray’s motivational image changes based on the intensity and/or duration of the user’s workout by becoming “thinner and more appealing” as the user performs more exercise. *E.g.*, Ex. 1004, Abstr., 5:44–46; *see also id.* at 13:50–61. As a result, the motivational image conveys the intensity and/or duration of the user’s exercise, and consequently, it represents an amount of exercise. *See* Pet. Reply 5–6. Although the motivational image does not provide a precise measurement (*see* PO Resp. 19–22; PO Sur-reply 7), precision is not required (*see* Pet. Reply 6; *cf.* PO Sur-reply 8 (indicating that “exercise use data” need not be precise)). In addition, under the agreed construction (advanced by Patent Owner), “exercise use data” is data that would *represent* an amount of exercise, not data that *quantifies* the amount of exercise. Also, contrary to Patent Owner’s assertion (*see* PO Resp. 19; PO Sur-reply 6), Petitioner does, in fact, identify evidence in support of its position—namely, Ray.

Second, Patent Owner argues that Ray’s time and distance are not generated “in response to” detecting the user engaging with the moving belt,

¹⁴ Moreover, even if we had agreed that Ray’s motivational image does not represent an amount of exercise, we would still find that the combination satisfies element 1[e] given Ray’s disclosure (or at least suggestion) of generating validated exercise data (e.g., time and distance) in response to detecting the user exercising.

as required by element 1[e]. PO Resp. 22–23; *see* PO Sur-reply 12, 14. Specifically, according to Patent Owner, “Ray teaches that as long as the treadmill belt is moving and regardless of whether the user is on the treadmill, exercise data accumulates with no determination by the controller whether or what portion of the exercise data is valid or not.” PO Resp. 22. Again, we disagree.¹⁵ One of the central purposes of Ray is to validate the amount of exercise performed by a user. *E.g.*, Ex. 1004, Abstr. (the system “validate[s] the . . . exercise achieved” by a user), 6:63–66 (“to confirm the user’s amount of exercise”), 8:26–28 (“[T]he [user’s] . . . exercise routine [is] confirmed.”). Ray accomplishes this using its validation process, which captures a user’s image only when the user is exercising. *E.g.*, *id.* at 6:43–66. Ray also transmits “the time 140 and duration 150 of the exercise performed by the user.” *Id.* at 13:27–30. As a result, the context of Ray’s disclosure makes it clear that Ray generates validated exercise information (e.g., time and distance) in response to detecting a user exercising (e.g., engaging with a moving belt). *See* Pet. Reply 11–14. At a minimum, as explained above, Ray suggests generating time and distance in response to detecting a user exercising.

Also, to the extent Patent Owner argues that Petitioner fails to show a “controller” that generates the claimed exercise use data (*see* PO Resp. 22–23), this argument is unavailing because it fails to respond to Petitioner’s

¹⁵ Moreover, even if we had found that Ray does not teach or suggest generating validated time and distance in response to detecting a user exercising, we would still find that the combination satisfies element 1[e] given Ray’s generation of a motivational image in response to detecting a user exercising.

proposed combination, in which Morris’ controller generates data using techniques described in Ray (*see, e.g.*, Pet. 28–29; Pet. Reply 14–15).

We have considered the testimony of Mr. van der Weide, who agrees with Patent Owner (*see* Ex. 2004 ¶¶ 35, 61–70), but we give his testimony on these points little weight. Mr. van der Weide discusses Mr. Rawls’ testimony, but he does not meaningfully discuss Ray’s disclosure. *See id.* As a result, he does not reconcile his opinions with the apparently conflicting portions of Ray. In addition, Mr. van der Weide’s testimony is conclusory because he does not identify evidence or reasoning sufficient to support his opinion that Ray fails to teach or suggest these aspects of the claim. *See* 37 C.F.R. § 42.65(a) (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.”).

In addition, we disagree with Patent Owner’s argument that Mr. Rawls’ deposition testimony supports Patent Owner’s position. *See* PO Resp. 19 (citing Ex. 2005, 22:12–24:14), 21–22 (citing Ex. 2005, 22:6–7, 24:3–5), 23 (citing Ex. 2005, 32:4–7, 38:19–39:2). Mr. Rawls testifies that Ray’s motivational image represents an amount of exercise, albeit not a precise measurement or one described extensively by Ray. *See* Ex. 2005, 20:4–24:14. Mr. Rawls also testifies that Ray’s system would continue to accumulate time and distance if the user departs from and returns to the treadmill between images captured by Ray’s camera. *See* Ex. 2005, 32:4–15, 36:6–39:3. This does not mean that Ray accumulates time and distance “regardless of whether the user is on the treadmill,” as Patent Owner contends (PO Resp. 22); rather, it simply shows that the accuracy of the data generated by Ray’s system is affected by how frequently the system

evaluates whether the user's exercise is detected. Stated differently, Ray generates validated time and distance in response to determining that a user is exercising, regardless of how frequently (or infrequently) that determination is made.¹⁶

For the reasons explained above, we find Petitioner's arguments persuasive as to element 1[e] and supported on the record before us. Accordingly, we find that the Morris-Ray combination teaches or suggests the subject matter of claim 1.

4. *Dependent Claim 2*

Claim 2 depends from claim 1 and recites "[t]he exercise apparatus of claim 1, wherein the controller is further configured to generate non-validated exercise use data in response to the sensor detecting the user not engaged with the operating unit and movement of the operating unit relative to the base." Ex. 1001, 8:42–46.

Petitioner contends that, in the Morris-Ray combination, "Morris taught or suggested this limitation because it explained that '***when a user [could] not be detected[,]***' . . . and failed to return within a certain period of time (e.g., approximately 6-8 seconds), a ***controlled slowdown*** of the treadmill was triggered." Pet. 30 (first alteration in original) (citing

¹⁶ We do not address Patent Owner's arguments pertaining to other potential types of exercise use data asserted in the Petition because we do not rely on those teachings and arguments based thereon in the Petition. See PO Resp. 16–18 (arguing that Morris does not teach the claimed "exercise use data"), 19 (arguing that heart rate is not "exercise use data"), 20 (arguing that the '340 patent fails to teach that "any multimedia content is 'exercise use data'"), 17–18 (arguing that pace, footfall force, and cadence are not "exercise use data").

Ex. 1006 ¶ 45, Fig. 8 (operations 850–856)). Petitioner also points to Morris’ paragraph 8, which Petitioner quotes as stating “[i]n an embodiment, these signals can be used to pause or stop a treadmill, for example, *when a user departs without stopping the belt of the treadmill*. These signals can also be used to *power down a machine after a user has been gone for a certain period of time*.” *Id.* (quoting Ex. 1006 ¶ 8).

Petitioner asserts that it would have been obvious to one of ordinary skill in the art that in the Morris-Ray combination “for at least the duration before slowdown was initiated, certain exercise information such as time—that did not depend on the user’s presence—would continue to be generated in the absence of the user until the slowdown occurred.” Pet. 31. Petitioner contends “[t]his information would be non-validated exercise use data because it was generated while the user was not being detected and, therefore, would not be reported (e.g., as part of the live feed to the user or the doctor), and it also would not have been subject to Ray’s identity verification.” *Id.* Additionally, Petitioner asserts that

Continuing to generate and display the non-validated information (e.g., for 6-8 seconds) prior to slowdown of the treadmill would have been obvious to a [person of ordinary skill in the art] because (1) it would have allowed reporting of the exercise information to be readily resumed without further delay upon the user’s return, and (2) it would have informed the user intending to jump back on the treadmill that the treadmill is still running so the user could use caution in getting back onto the treadmill, or to slow down the treadmill before resuming his/her exercise.

Id.

Patent Owner contends that “[n]either Morris nor Ray teaches or suggests claim 2.” PO Resp. 24. Patent Owner asserts that Petitioner

ignores the claim requirement that the controller generate non-validated exercise use data *in response to* the sensor detecting the user not engaged. *Id.*; see Ex. 2004 ¶ 72 (to satisfy “non-validated exercise use data,” the exercise use data must be “determined by the controller to have occurred while the sensor did not detect a user actively engaging the moving operating unit”).

Patent Owner asserts “[n]othing in Petitioner’s argument or evidence demonstrates that the controller of Morris makes any determination or does any analysis about the validity of the time data generated during the slowdown period.” PO Resp. 24–25 (citing Ex. 2004 ¶ 73). Patent Owner contends that, “[i]nstead, according to Morris, time and distance data would continue to be generated and accumulate without the user being detected by the sensor – in the same way it did when the user was detected by the sensor.” *Id.* at 25 (citing Ex. 2004 ¶ 73). Thus, according to Patent Owner, “in Morris, there is no indication that any time or distance data that is generated by the controller is in response to the sensor not detecting a user during the slowdown period. . . . [and] [t]hus, it is not ‘non-validated exercise use data.’” *Id.* (citing Ex. 2004 ¶ 73).

Patent Owner further contends that, because Petitioner failed to establish obviousness of claim 1, Petitioner also fails to establish obviousness of claim 2 because claim 2 depends from claim 1. PO Resp. 25.

Having considered the parties’ arguments and the evidence of record, we are persuaded that Morris discloses the additionally recited subject matter in claim 2. In response to determining that the user is not engaged with the moving belt, Morris’ controller generates time before implementing

a controlled slowdown. Ex. 1004 ¶ 45, Fig. 9. We find that this time discloses the claimed “non-validated exercise use data.” *See* Pet. 30–31.

Specifically, “during a user’s workout,” Morris’ controller periodically queries the sensor “to determine whether or not [the] user is still present.” Ex. 1006 ¶ 45, Fig. 9 (step 850). The workout program continues if the user is still on the belt. *Id.* ¶ 45, Fig. 9 (step 862). But, if not, Morris’ controller alters the display to ask the user to return to his workout. *Id.* ¶ 45, Fig. 9 (step 852). Then, “[t]he user timeout counter increments (block 854), and the processor checks the counter to see if it has surpassed a threshold (block 856).” *Id.* ¶ 45. If the user returns, the display returns to normal, the workout continues, and the counter resets. *Id.* ¶ 45, Fig. 9 (steps 850, 862, 864). However, “[i]f the user does not return in time, the user timeout counter will ultimately meet the time delay (block 856) and trigger a controlled slowdown (block 860) to stop the treadmill.” *Id.* ¶ 45. Morris states that the time delay associated with this process “is preferably at least about 6–8 seconds.” *Id.* During the six to eight seconds of this pre-slowdown process, Morris’ controller generates time in response to determining that the user is not engaged with the belt, and this time discloses the claimed “non-validated exercise use data.”

Patent Owner’s contrary arguments (*see* PO Resp. 24–25) are unavailing. Although Patent Owner argues that Petitioner fails to show that the data is generated “in response to” the sensor not detecting the user (*id.*), Morris clearly discloses that this pre-slowdown process (i.e., steps 852–860) occurs in response to the user not being detected (i.e., step 850). Ex. 1006, Fig. 9; *see also id.* ¶ 45. Patent Owner also argues that Petitioner fails to show that the controller determines the “validity of the time data” (PO

Resp. 24–25), but the claim does not separately require that the controller “validate” the exercise use data. *See supra* § II.C.2 (addressing claim construction arguments); *also cf.* PO Resp. 6, 11–12 (Patent Owner’s proposed claim constructions do not expressly require the controller to validate the exercise use data). Additionally, we disagree with Patent Owner’s argument—that Petitioner’s challenge to claim 2 fails because of its dependency from claim 1—because, for the reasons discussed above, we do not agree that Petitioner’s showing regarding claim 1 is deficient.

Accordingly, we find that the Morris-Ray combination teaches or suggests the subject matter of claim 2.

5. *Dependent Claim 3*

Claim 3 depends from claim 2 and recites

[t]he exercise apparatus of claim 2, wherein on startup of the motor and movement of the operating unit relative to the base, the controller is configured to generate the non-validated exercise use data, and wherein the controller is further configured to record the non-validated exercise use data as validated exercise use data in response to the sensor detecting engagement of the user with the operating unit.

Ex. 1001, 8:47–53.

Petitioner sets forth a detailed analysis explaining how the combination of Morris and Ray teaches the subject matter of claim 3.

Pet. 32–34.

Patent Owner contends that “[c]laim 3 is not obvious because claim 2 is not obvious.” PO Resp. 26 (citing PO Resp. § VI.A.2; Ex. 2004 ¶ 75).

We find Petitioner’s argument and analysis persuasive and supported on the record before us for the reasons stated by Petitioner. *See* Pet. 32–34. We disagree with Patent Owner’s argument because we find that Petitioner

has demonstrated that the Morris-Ray combination teaches or suggests the subject matter of claim 2 for the reasons discussed above. *See supra* § II.D.4 (claim 2). Accordingly, we find that the Morris-Ray combination teaches or suggests the subject matter of claim 3.

6. *Dependent Claims 4 and 5*

Claim 4 depends from claim 1 and recites “[t]he exercise apparatus of claim 1, wherein the validated exercise use data includes an amount of user exercise time defined by a duration that the sensor detects engagement of the user with the operating unit during movement of the operating unit relative to the base.” Ex. 1001, 8:54–58. Claim 5 depends from claim 1 and recites “[t]he exercise apparatus of claim 1, wherein the validated exercise use data includes a distance traveled by the user, wherein the distance traveled is defined while the sensor detects engagement of the user with the operating member.” *Id.* at 8:59–63.

Petitioner contends that

Ray’s Figure 1 (annotated below) showed time spent exercising was part of the exercise data displayed on the screen while the user was exercising ([Ex. 1004], 5:46–48) and explicitly stated that, along with [the] identity of the user, “***the time 140 and duration of the exercise performed by the user 20***” were transmitted to the server and/or reported to the doctor.

Pet. 34 (citing Ex. 1004, 13:24–30, 13:21–24, 10:64–67, 13:20–36, Pet. § VI.A.2 (element 1[e])). Petitioner’s annotated and partially enlarged version of Ray’s Figure 1 is reproduced below.

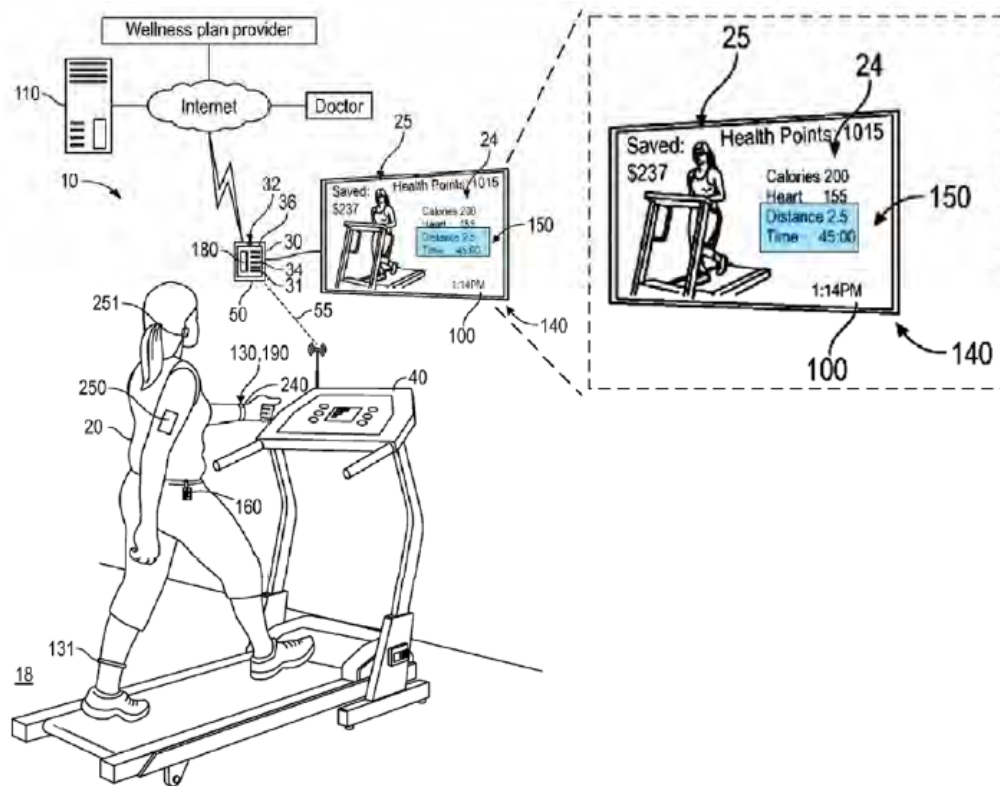


FIG. 1 (Annotated and Display Area Enlarged)

Ray's Figure 1 shows a user exercising on exercise machine 40 with camera 32 of electronic device 30 recording the exercise data. Ex. 1004, 13:7–30. Petitioner enlarged the display area of Ray's treadmill using dashed lines and annotated both instances of the display with blue to identify the distance and time displayed. Pet. 35. Petitioner contends it would have been obvious to one of ordinary skill in the art “that ‘the duration of the exercise performed by the user’ was part of the validated exercise use data because it was detected while the user was engaged with the treadmill as detected and confirmed via images of the exercising user, and reported along with the identity of the user.” *Id.* (citing Ex. 1002 ¶¶ 179–180).

Petitioner also contends “Ray disclosed that an exercising user could ‘view on the display her exercise data such as . . . **distance advanced.**’

Pet. 36 (citing Ex. 1004, 5:46–48, 10:64–67, 13:31–36, Fig. 1, Pet. § VI.A.2 (element 1[e])). And Petitioner asserts that

distance was one of several exercise data displayed on the screen when the user was exercising . . . [and] it would have been obvious to [one of ordinary skill in the art] that “distance” that was listed alongside “time” . . . [and] would also be validated exercise data that was collected during the user’s exercise and reported to a third party, such as a doctor.

Id. (citing Ex. 1002 ¶¶ 181–182).

Addressing claims 4 and 5 together, Patent Owner contends that

For the reasons stated above for claim 1, the Ray and Morris combination does not teach or suggest a controller that generates: (1) validated time data defined by the duration of time that the sensor detects a user engaged with the moving operating unit; or (2) validated distance traveled data, which is defined by the distance incurred while the sensor detects engagement of the user with the operating unit.

PO Resp. 26. Patent Owner also asserts that “claims 4 and 5 are not obvious because claim 1 is not obvious.” *Id.* (citing PO Resp. § VI.A.1; Ex. 2004 ¶ 76).

As we explained in the context of claim 1, above, we find that Ray generates the time and distance associated with the exercise actually performed by a user (*see, e.g.*, Ex. 1004, 5:46–48, 6:43–66, 8:26–28), and this teaches generating “validated exercise use data” in response to detecting a user exercising on a moving treadmill belt. *See also, e.g., id.* at Abstr. (Ray’s system “*validate[s]* the user’s identity and *exercise achieved*” (emphasis added)), 13:27–30 (transmitting “the time 140 and duration 150 of the exercise performed by the user”). Although Ray does not state *in haec verba* that its system generates time and distance in response to detecting the user exercising on the belt, we are persuaded that an ordinarily skilled

artisan would have understood Ray in this manner.¹⁷ See Ex. 1002 ¶¶ 167–171. Moreover, even if Ray does not teach these claimed aspects, it suggests them—Ray repeatedly states that it uses the image taken by its camera to validate the exercise actually performed by the user, and it validates, displays and transmits the amount of exercise performed by the user. See, e.g., Ex. 1004, 6:43–7:10, 8:26–28, 13:27–30; see also Ex. 1002 ¶ 169; Ex. 1004, 9:40–47 (stating that the invention “validat[es] the identity of the user and the exercise performed” to solve the problem of people fraudulently submitting erroneous exercise data). Accordingly, for the same reasons discussed above and in the context of claim 1, we find that the Morris-Ray combination teaches or suggests the subject matter of claims 4 and 5.

7. *Dependent Claim 6*

Claim 6 depends from claim 1 and recites, “[t]he exercise apparatus of claim 1, wherein the controller is further configured to record the validated exercise use data in response to the sensor detecting engagement of the user with the operating unit.” Ex. 1001, 8:64–67.

Petitioner contends that Ray discloses that its validated exercise use data is “sent to server 110 and/or ‘**stored on a computer or cloud-based server** to be viewed at any time.’” Pet. 37 (citing Ex. 1004, 6:1–6, 6:63–7:7, 8:1–9, 13:7–30, 18:5–15). Petitioner asserts it would have been obvious to one of ordinary skill in the art “that such validated exercise use data obtained in response to detection of the exercising user would be stored in memory (recorded) via the controller.” *Id.* (citing Ex. 1002 ¶ 183).

¹⁷ Again, we do not rely on inherency in this Decision.

Patent Owner contends that “[c]laim 6 is not obvious because claim 1 is not obvious.” PO Resp. 26 (citing PO Resp. § VI.A.1; Ex. 2004 ¶ 77).

We find Petitioner’s argument and analysis persuasive and supported on the record before us for the reasons stated by Petitioner. *See* Pet. 36–37. We disagree with Patent Owner’s argument at least because we find, above, that Petitioner has demonstrated that the Morris-Ray combination teaches or suggests the subject matter of claim 1. *See supra* § II.D.3 (claim 1). Accordingly, we find that the Morris-Ray combination teaches or suggests the subject matter of claim 6.

8. *Dependent Claim 7*

Claim 7 depends from claim 1 and recites

[t]he exercise apparatus of claim 1, wherein the controller is configured to establish communication with a remote location, and wherein the controller is configured to maintain communication between the exercise apparatus and the remote location while the user is determined by the controller not to be engaged with the operating member.

Ex. 1001, 9:1–6.

Petitioner contends Ray’s Figures 1 and 2 illustrate “the electronic device communicated via Internet and had ‘at least periodic access to the Internet or other large area network.’” Pet. 37 (citing Ex. 1004, 12:61–64). Regarding communicating with a remote location, Petitioner asserts

Ray’s camera could “record a still or video image or produce a *live feed* of the patient or exercising user 20 when movement is detected by the camera 32,” ([Ex. 1004], 13:20–24), provide[] “the real-time image . . . [via] a live feed image broadcast *to a remote location*,” ([Ex. 1004], 13:65–67) such as “**through the use of technology similar to Skype**” ([Ex. 1004], 6:67–7:3) or Face Time ([Ex. 1004], 5:5–7), which used Internet. ([Ex. 1004], 8:1–4.)

Pet. 38 (third alteration in original). And Petitioner contends “Ray also explained that the validated exercise data was sent to be stored in a remote server.” *Id.* (citing Ex. 1004, 7:4–10, 8:1–8).

Regarding maintaining the communication while the user is determined by the controller not to be engaged with the operating member, Petitioner asserts that it would have been obvious to one of ordinary skill in the art to “maintain the communication (e.g., Skype connection) with the remote location for at least some period of time when the user was not being detected to avoid delays in trying to re-establish the connection once the user had come back.” Pet. 39 (citing Ex. 1002 ¶¶ 184–186); *see id.* (providing additional reasons maintaining communication would have been obvious to one of ordinary skill in the art).¹⁸

Patent Owner contends that Petitioner fails to identify a “controller” in Ray that performs the claimed functions recited in claim 7. PO Resp. 26–27. Patent Owner asserts that the only controller Petitioner identifies is in the context of claim 1 and, there, Petitioner relies exclusively on Morris’ FIT processor, but does not assert that Morris’ FIT processor can perform any of the functions of claim 7. *Id.* at 27.

Additionally, Patent Owner asserts that, even if Petitioner had identified a controller in Ray, “Ray does not teach or suggest a controller that maintains communication between the exercise apparatus and the remote location while the user is determined by the controller not to be

¹⁸ We do not rely on Petitioner’s argument that the Morris-Ray combination treadmill could be in communication with a remote wall-mounted television (*see* Pet. 39), and, therefore, we do not address Patent Owner’s arguments in response thereto (*see, e.g.*, PO Resp. 28–29).

engaged with the operating member.” PO Resp. 27 (citing Ex. 2004 ¶ 79). Patent Owner contends that, “[c]ontrary to Ray having a controller that has the functionality required by claim 7, Petitioner previously asserted that Ray teaches that ‘[o]nce the user was no longer exercising on the treadmill, the generation and reporting of the user’s image would have stopped’ and that Ray ‘stop[ed] [sic] the reporting once the user could not be detected.’” *Id.* at 27–28 (second alteration in original) (citing Pet. 29). Patent Owner asserts that “Petitioner cannot reasonably argue that Ray both maintains and does not maintain a connection when no user is detected.” *Id.* at 28 (citing Ex. 2004 ¶ 79).

Further, Patent Owner asserts, “[d]espite Ray teaching away from maintaining a connection with the remote location when the user is not detected,” Petitioner argues that it would be obvious to do so to avoid delays in re-establishing a connection even though the prior art does not suggest that there would be delays in reconnecting to the remote location if the user returned to exercise. PO Resp. 28 (citing Ex. 2004 ¶ 80). Patent Owner contends that “this argument is unsupported and an improper attempt to satisfy the claim element with hindsight when the Ray reference taught away.” *Id.* (citing Ex. 2004 ¶ 80).

We find that Petitioner has shown that the Morris-Ray combination teaches or suggests the subject matter of claim 7. First, we agree with Patent Owner that Petitioner’s combination relies on Morris’ FIT processor as teaching the claimed controller. *See* Pet. 20 (“Morris disclosed the claimed ‘controller’ in the form of an FIT (fitness) processor 520 . . .”). But, Patent Owner’s argument completely overlooks the *combination* proposed by Petitioner, which relies on “Ray’s functionality to share the exercise data

with a remote location in real time” with a “physician or personal trainer.” *Id.* at 14–15 (discussing the combined teachings of the Morris and Ray); *see* Pet. Reply 19 (reiterating Petitioner’s combination). Thus, it is not surprising that Petitioner points to teachings in Ray regarding the functionality of establishing communication with a remote location, which functionality is performed by the controller of Morris in Petitioner’s proposed combination.

Second, we disagree with Patent Owner that Petitioner’s arguments are contradictory and we also disagree with Patent Owner that Ray teaches away from “maintain[ing] communication between the exercise apparatus and the remote location while the user is determined by the controller not to be engaged with the operating member” as recited in claim 7. On the former point, we agree with Petitioner that Patent Owner “improperly equates generation and reporting of exercise use data with maintaining a connection with a remote location.” *See* Pet. Reply 20. Petitioner previously asserted that generation and reporting of the *data* would stop when Ray does not detect a user, but this does not mean that the *connection* would also be stopped. On the latter point, “[a] reference may be said to teach away when a person of ordinary skill, upon reading the reference . . . would be led in a direction divergent from the path that was taken by the applicant.” *In re Haruna*, 249 F.3d 1327, 1335 (Fed. Cir. 2001) (quoting *Tec Air, Inc. v. Denso Mfg. Mich. Inc.*, 192 F.3d 1353, 1360 (Fed. Cir. 1999)); *see In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004) (holding that, to teach away, the prior art must “criticize, discredit, or otherwise discourage the solution claimed”). Patent Owner fails to point to anything in Ray that discourages or would otherwise lead one of ordinary skill in the art away from

maintaining a connection with a remote location when exercise use data is not reported at that precise moment. Rather, Petitioner provides a reason with rational underpinning as to why one of ordinary skill in the art would have been motivated, with a reasonable expectation of success, to maintain the connection—“to avoid delays in trying to re-establish the connection once the user had come back.” Pet. 39. That position is supported by the testimony of Mr. Rawls. Ex. 1002 ¶ 186.

Accordingly, we find that the Morris-Ray combination teaches or suggests the subject matter of claim 7.

9. Independent Claim 8

Independent claim 8 is similar to claim 1 and recites (with Petitioner’s annotations (Pet. 39–43) included):

8. [pre] An exercise apparatus comprising:
 - [a] a motor;
 - [b] an operating member driven by the motor;
 - [c] a sensor operable to detect engagement of a user with the operating member;
 - [d] a controller in communication with the operating member and the sensor; and
 - [e] a communication interface in communication with the controller,
 - [f] wherein the controller is configured to determine whether the user is engaged with the operating member in response to the controller determining that the user is engaged with the operating member,
 - [g] wherein the controller is configured to report exercise use data to the communication interface in response to the controller determining that the user is engaged with the operating member.

Ex. 1001, 9:7–23.

For elements 8[a]–[d], 8[f], and 8[g], Petitioner relies on its discussion of claim 1. The chart below summarizes the correspondence between Petitioner’s discussion of claim 8 and reliance on claim 1.

Claim 8	Claim 1
8[pre]	1[pre]
8[a]	1[b], 1[c]
8[b]	1[b], 1[c]
8[c]	1[d]
8[d]	1[e]
8[e]	N/A (see below)
8[f]	1[e]
8[g]	1[e], 8[e] ¹⁹

See Pet. 40, 43 (indicating the correspondence shown above).

Additionally, Petitioner sets forth a detailed discussion and analysis of element 8[e] with supporting citations to the evidence of record. *Id.* at 40–43. For the claimed “communication interface,” Petitioner presents alternative mappings, pointing to Morris’ display device 524, Morris’ display processor 522 (which communicates with its display device 524), and Ray’s display 34. Pet. 41 (citing Ex. 1004, 9:55–57, 12:59–67, 13:50–54, Figs. 1–3; Ex. 1006 ¶¶ 23–24, 35–36, Figs. 6, 11, 12A–12C).

Petitioner points to the components in Ray (such as interface 55) that allow the user’s motivational image and/or exercise data to be transmitted from the treadmill over the Internet via a live feed or to a storage device (such as a cloud-based server). Pet. 41–42 (citing Ex. 1004, 3:46–51, 5:65–

¹⁹ In this instance, Petitioner also relies on its argument raised in the context of element 8[e] when addressing element 8[g]. See Pet. 43 (noting that “when user engagement is detected, exercise use data is reported to the display and/or to a remote storage”).

6:5, 6:67–7:10, 8:1–10, 13:31–36, 13:65–67, Fig. 3; Ex. 1002 ¶¶ 189–190); *see also id.* at 40 (discussing “communication interface” in the ’340 patent); 41–42 (asserting that Ray discloses sending the virtual image to a remote location) (citing Ex. 1004, 3:46–50, 5:49–51, 7:4–10, 7:15–36, 13:7–9). Petitioner contends that it would have been obvious to incorporate Ray’s transmission functionality into Morris’s treadmill. *Id.* at 42 (citing Ex. 1002 ¶ 143); *see also id.* at 12–15 (addressing rationale to combine and reasonable expectation of success).

Patent Owner asserts that Petitioner fails to show that the combination teaches element 8[g] for the same reasons Patent Owner argued in response to Petitioner’s challenge to element 1[e]. PO Resp. 29 (citing Ex. 2004 ¶ 85). In this context, Patent Owner asserts the following:

[T]o the extent any “exercise use data” is reported in Morris and Ray, it is *not* reported *in response* to the controller determining the user is engaged with the operating member. [Ex. 2004 ¶ 85.] There is no teaching or suggestion in Ray that a controller ever determines a user is engaged with the member, much less that a controller reports “exercise use data” *in response* to determining engagement by the user. *Id.* Regarding Morris, there is no teaching or suggestion that its controller reports “exercise data” *in response* to determining engagement by the user. *Id.* Thus, Morris and Ray do [not] render claim 8 obvious.

PO Resp. 29–30.

Having considered the parties’ arguments and the evidence of record, we are persuaded that the Morris-Ray combination teaches element 8[g] in two alternative ways.

First, we are persuaded that an ordinarily skilled artisan would have understood Ray to have a “communication interface” (*see* Pet. 41–42) because Ray transmits the claimed exercise use data (time, distance, and the

motivational image) to a remote location over the Internet.²⁰ *See* Ex. 1004, 3:47–51, 5:65–6:5, 6:67–7:8, 13:7–9, 13:65–67, Fig. 3; Ex. 1002 ¶ 190. Specifically, Ray sends an “exercise report . . . via the internet to a health professional or wellness manager.” Ex. 1004, 5:65–6:5; *see also, e.g., id.* at 8:40–45 (sending “duration of exercise” to third party), 13:7–19 (sending “data from the exercise machine 40” to doctor or wellness program through server 110), 13:27–30 (sending “time 140 and duration 150 of the exercise performed by the user 20” to server 110). Ray also states that the motivational image may be “broadcast to a remote location,” such as a user’s doctor or wellness manager. *Id.* at 5:49–52, 13:65–67; *see also, e.g., id.* at 13:7–19.

In addition, we are persuaded that the proposed combination includes Ray’s communication interface, which receives the validated exercise use data from Morris’ controller. Specifically, in the Morris-Ray combination, Morris’ controller generates the exercise use data (including time, distance, and the motivational image) (*see supra* § II.D.2; Pet. 13–14, 20–23), and Ray’s communication interface “receive[s] the generated exercise [use] data from, and under the control of, the controller to transmit the data to a storage device and/or to a third party” (Pet. 43).

Second, we are persuaded that Morris’ display device 524 also teaches the claimed “communication interface”²¹ (*see* Pet. 41) because it displays exercise use information. *See, e.g.,* Ex. 1006 ¶¶ 32 (“The processors . . .

²⁰ Notably, the ’340 patent states that the “communication interface” may be an Internet interface. Ex. 1001, 7:14–17 (*cited in* Pet. 40).

²¹ Notably, the ’340 patent states that the “communication interface” may be a display device. Ex. 1001, 6:50–53 (*cited in* Pet. 40).

output some or all of the parameters to one or more displays 524, or the like.”), 36 (noting that display 524 may “display indications of the presence or absence of a user”), 51 (describing display of exercise information such as distance), Fig. 11. In the Morris-Ray combination, the display device shows time, distance, and the motivational image. *See supra* § II.D.2; Pet. 12–15.

Patent Owner’s contrary arguments are unavailing. First, Petitioner ties each of the elements of claim 8 (with the exception of element 8[e]) to the elements of claim 1 that we addressed thoroughly above. Thus, we find Petitioner establishes that those elements of claim 8 are taught or suggested by the proposed combination for the same reasons discussed above in the context of claim 1.

Second, we disagree with Patent Owner’s argument that Petitioner fails to show that the Morris-Ray combination reports exercise use data in response to the controller determining engagement by a user. Initially, we note that in the context of element 1[e] of claim 1, we find that Petitioner establishes that Ray’s time, distance, and motivational image are generated *in response to* detecting engagement by a user. *See supra* § II.D.3.f (element 1[e]). Ray also teaches that the reporting of its validated exercise use data is in response to determining engagement by the user for several reasons. First, part of the process, as we’ve described above, involves generating validated exercise use data in response to determining user engagement. Thereafter, Ray specifically teaches that “[t]his information can be sent to someone in the medical industry or wellness manager to confirm the user’s amount of exercise.” Ex. 1004, 6:63–66. Thus, at least because Ray generates validated exercise use data in response to determining user engagement, Ray’s reporting of that exercise use data also

is in response to determining user engagement because that is a prerequisite to Ray's reporting process.²² Second, Ray's display of the motivational image of the user also teaches element 8[g] by reporting the exercise use data (motivational image) to the communication interface (display) in response to the controller determining that the user is engaged with the operating member (as discussed for 1[e]).

Accordingly, for each of these reasons, we find that the Morris-Ray combination teaches or suggests the subject matter of claim 8.

10. Dependent Claim 9

Claim 9 depends from claim 8 and recites "[t]he exercise apparatus of claim 8, wherein the controller is configured to stop reporting the exercise use data to the communication interface in response to the controller determining that the user is not engaged with the operating member and the operating member is driven by the motor." Ex. 1001, 9:24–28.

Referring to its discussion of element 1[e], Petitioner contends that, if Ray's functionality determines that the user is not engaged with the operating member and the operating member is being driven by the motor, the controller stops reporting the exercise use data (in this instance, the user's virtual image) to the communication interface and there would be no virtual image displayed. Pet. 43–44 (citing Ex. 1004, 6:55–57, 13:50–56, 6:17–20; Pet. § VI.A.2 (element 1[e])).

Patent Owner raises several arguments. First, that element 1[e] "is different and has nothing to do with the controller *stopping reporting*." PO

²² We note that Patent Owner does not assert, and claim 8 does not recite, any specific timing requirement for said reporting to be "in response to" determining user engagement.

Resp. 30. Although we agree with Patent Owner that element 1[e] does not recite that the controller is configured to stop reporting the exercise use data, we understand Petitioner's reference to element 1[e] to reflect that it recites an action (generating validated exercise use data) by the controller in response to detection of user engagement with the operating unit and movement of the operating unit relative to the base, and, thus, Petitioner's discussion of element 1[e] may have some degree of overlap in terms of controller functionality.

Second, Patent Owner contends that "Ray" 'virtual image' is not 'exercise use data,'" repeating its argument in response to Petitioner's challenge to element 1[e]. PO Resp. 30. But we rejected Patent Owner's argument in the context of element 1[e] and maintain that disagreement here for the same reasons. *See supra* § II.D.3f.

Third, Patent Owner contends that Ray does not teach stopping the reporting of exercise use data to the communication interface. PO Resp. 31. But, we agree with Petitioner that "Ray explicitly discloses that its thinning image is displayed (i.e., reported) only when a user is detected." Pet. Reply 21 (citing Ex. 1004, claim 14 (displaying thinning image only while exercise session is detected); Pet. 43–44); *see* Ex. 1004, 6:53–56, 13:65–67, 19:10–16.

Fourth, Patent Owner contends that "neither Morris nor Ray teaches or suggests a controller stopping the reporting of 'exercise use data' when the controller determines no user is engaged." PO Resp. 31–32 (citing Ex. 2004 ¶ 90). Patent Owner asserts that "Petitioner's argument and its expert's conclusory opinion can only be explained by the improper use [of] hindsight and *ex post* reasoning." *Id.* at 32. We disagree with Patent Owner.

Specifically, Petitioner, supported by Mr. Rawls’ testimony, contends that “in the Morris-Ray combination,” “wherein after not detecting the user while the belt was still running, [Morris’] display was altered to produce a ‘please return message,’ and after about 6–8 seconds, a controlled slowdown was initiated.” Pet. 44 (citing Ex. 1006 ¶ 45). Petitioner contends it would have been obvious to one of ordinary skill in the art that

in the Morris-Ray combination, failure to detect an exercising user would cause the reporting of exercise use data (the user’s virtual image and associated exercise data) to the doctor or wellness trainer to cease, as explained above in connection with Ray, while providing a “please return message” on the display screen when the motor was still running.

Id. at 44–45 (citing Ex. 1002 ¶¶ 195–199). And Petitioner’s argument is supported by Mr. Rawls’ testimony and the combination of Morris’ and Ray’s teachings for the reasons set forth by Petitioner.

Accordingly, we find that Petitioner establishes that the Morris-Ray combination teaches or suggests the subject matter of claim 9.²³

11. Dependent Claim 10

Claim 10 depends from claim 8 and recites “[t]he exercise apparatus of claim 8, wherein the controller is in communication with the communication interface while the operating member is driven by the motor and the user is determined by the controller not to be engaged with the operating member.” Ex. 1001, 9:29–33.

²³ Patent Owner also asserts that “claim 9 is not obvious because claim 8 is not obvious.” PO Resp. 32 (citing PO Resp. § VI.A.7; Ex. 2004 ¶ 90). Because we find Petitioner’s analysis of claim 8 persuasive (*see supra* § II.D.9 (addressing claim 8)), we also disagree with this argument raised by Patent Owner.

Petitioner relies on the same argument and evidence presented for claim 7. *See* Pet. 45 (referring to Petitioner’s discussion of claim 7).

Patent Owner asserts “claim 10 is not obvious for the reasons state[d] above in claims 7 and 9, and because claim 8 is not obvious.” PO Resp. 32–33 (citing PO Resp. § VI.A.7; Ex. 2004 ¶ 92).

We find that the combination of Morris and Ray teaches or suggests the additionally recited subject matter of claim 10 for the same reasons discussed above pertaining to claim 7, which recites substantially similar claim language. *See supra* § II.D.8 (claim 7). Additionally, for the reasons explained above in our discussion of claims 8 and 9, we do not agree with Patent Owner’s arguments directed to those claims. *See supra* §§ II.D.9–10 (claims 8 and 9). Accordingly, we find that the Morris-Ray combination teaches or suggests the subject matter of claim 10.

12. Dependent Claim 11

Claim 11 depends from claim 10 and recites “[t]he exercise apparatus of claim 10, wherein the communication interface is in communication with a remote storage device while the operating member is driven by the motor and the user is determined by the controller not to be engaged with the operating member.” Ex. 1001, 9:34–38.

Petitioner relies on the same argument and evidence presented for claim 10. *See* Pet. 45 (referring to Petitioner’s discussion of claim 10). Additionally, Petitioner asserts that it would have been obvious to one of ordinary skill in the art to have the communication interface in communication with a remote storage device even when the user is determined by the controller to not be engaged with the operating member to allow the treadmill “to quickly resume transmitting the exercise data to the

remote storage device once the user was detected to be present and exercising” and to avoid time delays in establishing a new communication. *Id.* (citing Ex. 1004, 6:1–5, 7:4–8, 8:1–9; Ex. 1002 ¶¶ 201–202).

Patent Owner asserts “[f]or the reasons stated with respect to claims 7, 9, and 10, claim 11 would not have been obvious. Claim 11 is also not obvious because claim 10 is not obvious.” PO Resp. 33 (citing PO Resp. § VI.A.9; Ex. 2004 ¶ 93).

We find that the combination of Morris and Ray teaches or suggests the additionally-recited subject matter of claim 11 for the reasons provided by Petitioner and for the reasons discussed above pertaining to claim 10. *See supra* § II.D.11 (claim 10). Additionally, for the reasons explained above, in our discussion of claims 7 and 9, we do not agree with Patent Owner’s arguments directed to those claims. *See supra* § II.D.8 (claim 7), § II.D.10 (claim 9). Accordingly, we find that the Morris-Ray combination teaches or suggests the subject matter of claim 11.

13. Dependent Claim 12

Claim 12 depends from claim 8 and recites, “[t]he exercise apparatus of claim 8, wherein the controller is configured to report the exercise use data to the communication interface only in response to the controller determining that the user is engaged with the operating member and the operating member is being driven by the motor.” Ex. 1001, 9:39–44.

Petitioner refers to its discussion and analysis of element 1[e], where Petitioner explained “how Ray taught or suggested this limitation because its camera detected the presence of the user as long as the user was moving and the exercise data was being generated by the treadmill, and stopped

recording images, and thus not reporting the data, when the user stopped exercising.” Pet. 46 (citing Ex. 1004, 6:53–57).

Patent Owner asserts “claim 12 is not obvious for the reasons state[d] above regarding elements 1[e] and 8[g] and because claim 8 is not obvious.” PO Resp. 33 (citing PO Resp. § VI.A.7; Ex. 2004 ¶ 94).

We find that the combination of Morris and Ray teaches or suggests the subject matter of claim 12 for the reasons provided by Petitioner and for the reasons discussed above pertaining to elements 1[e] and 8[g]. *See supra* § II.D.3.f (element 1[e]), § II.D.9 (claim 8). Accordingly, we find that the Morris-Ray combination teaches or suggests the subject matter of claim 12.

14. Independent Claim 13

Claim 13 is a method claim and recites (with Petitioner’s annotations (Pet. 46–48) included):

13. [pre] A method of verifying the use of an exercise apparatus, the method comprising:
- [a] operating an operating member driven by a motor;
 - [b] generating exercise use data in response to operating the operating member;
 - [c] receiving, at a controller, sensor data from a sensor;
 - [d] comparing, at the controller, the sensor data with a known data parameter that is indicative of a user not engaging the operating member; and
 - [e] reporting, by the controller, the exercise use data to a communication interface in response to the comparison step indicating that the user is engaged with the operating member.

Ex. 1001, 9:45–10:12.

Petitioner provides detailed argument with supporting evidence tying many of the elements of claim 13 to arguments raised in the context of claims 1 and 8 as shown in the chart below. *See* Pet. 46–49.

Claim 13	Claim 1
13[pre]	1[pre], 1[c]
13[a]	1[a]–1[c]
13[b]	1[d], 1[e] ²⁴
13[c]	1[d]
13[d]	1 ²⁵
13[e]	8[g] ²⁶

See Pet. 40, 43 (identifying the correspondence shown above). Additionally, Petitioner sets forth a detailed discussion and analysis of element 8[e] with supporting citations to the evidence of record. *Id.* at 40–43.

Patent Owner relies on its arguments directed to elements 1[e] and 8[g], asserting “the proposed Morris-Ray controller does not report ‘exercise use data’ to the communication interface *in response* to anything other than the movement of the operating unit.” PO Resp. 34. Patent Owner contends “Petitioner does not argue, let alone show, that the Morris-Ray combination

²⁴ Petitioner refers to its discussion under heading “Generating Validated Exercise Use Data” in element 1[e], which “explain[s] generating exercise use data when the treadmill [is] running.” Pet. 47 (emphasis omitted).

²⁵ Petitioner refers to its discussion of the teachings that would be combined from Morris and Ray. *See* Pet. 48 (“As explained in claim 1, *supra*, in the Morris-Ray combination, the user detection mechanism based on Morris’ reluctance sensor would be augmented by Ray’s user detection system via a camera.”).

²⁶ Petitioner’s Reply explains that the Petition contains a typographical error in that it refers back to element 8[e] instead of element 8[g], “which demonstrates how the Morris-Ray combination teaches reporting exercise use data in response to determining a user is engaged.” Pet. Reply 22.

teaches or suggests reporting ‘exercise use data,’ like time or distance, to the communication interface *in response* to the comparison step indicating the user is engaged with the operating member.” *Id.* (citing Pet. 48; Ex. 2004 ¶ 96); *see* PO Sur-reply 18 (“as with element 8[g], Petitioner still fails to show that the Morris-Ray combination teaches or suggests reporting ‘exercise use data,’ like time or distance, to the communication interface *in response to* the comparison step indicating the user is engaged with the operating member” (citing Pet. 48; Ex. 2004 ¶ 96)).

Element 13[e] is similar to element 8[g] in that each recites the controller reporting the exercise use data to the communication interface in response to determining that the user is engaged with the operating member (8[g]) or in response to the comparison step indicating that the user is engaged with the operating member (13[e]). As Petitioner asserts in the context of element 13[d], which recites the comparison step, “Morris describe[s] that the user’s presence can be detected by comparing the sensor signals to a baseline signal (known data parameter) caused due to slight vibrations when only the motor [is] driving the belt (indicative of a user not using the treadmill).” Pet. 47 (citing Ex. 1006 ¶ 31). Additionally, Petitioner points to its discussion of the combination of Morris and Ray and that “the user detection mechanism based on Morris’ reluctance sensor would be augmented by Ray’s user detection system via a camera.” *Id.* at 48.

For the reasons discussed above in the context of element 8[g], we do not agree with Patent Owner’s arguments directed to element 13[e], the sole element of claim 13 contested by Patent Owner. *See* PO Resp. 34. Rather, we find that Petitioner has shown that the Morris-Ray combination teaches

element 13[e] (as well as the other elements of claim 13) for the reasons set forth by Petitioner and as summarized above. Accordingly, we find that the Morris-Ray combination teaches or suggests the subject matter of claim 13.

15. Dependent Claim 14

Claim 14 depends from claim 13 and recites “[t]he method of claim 13, further comprising ceasing reporting of the exercise use data to the communication interface in response to the controller determining that the user is not engaged with the operating member while the operating member is driven by the motor.” Ex. 1001, 10:12–16.

Petitioner relies on the same argument and evidence presented for claim 9. *See* Pet. 49 (referring to Petitioner’s discussion of claim 9).

Patent Owner asserts “[c]laim 14 is not obvious for the reasons stated above for claim 9. Claim 14 is also not obvious because claim 13 is not obvious.” PO Resp. 35 (citing PO Resp. § VI.A.12; Ex. 2004 ¶ 97).

We find Petitioner’s arguments and evidence persuasive for the same reasons discussed above pertaining to claim 9. *See supra* § II.D.10 (claim 9). Additionally, for the reasons explained above, in our discussion of claims 7 and 8, we do not agree with Patent Owner’s arguments directed to those claims. *See supra* §§ II.D.8–9 (claims 7 and 8). Accordingly, we find that the Morris-Ray combination teaches or suggests the subject matter of claim 14.

16. Dependent Claim 15

Claim 15 depends from claim 13 and recites “[t]he method of claim 13, further comprising generate [sic] the exercise use data in response to the determination that the user is engaged with the operating member and in response to the determination that the user is not engaged with the

operating member while the operating member is being driven by the motor.” Ex. 1001, 10:18–23.

Petitioner relies on its discussion of claim 9 and elements 1[e] and 13[e]. Pet. 49. Petitioner asserts that, as discussed in elements 1[e] and 13[e],

the validated exercise use data would be generated and reported to the communication interface (to be displayed or sent to a remote location) when the user’s engagement with the treadmill was detected. As also explained regarding claim 2, it would have been obvious to a [person of ordinary skill in the art] that (non-validated) exercise use data would be generated for at least some interval when the sensor detected the treadmill was running without the user.

*Id.*²⁷

Similar to Petitioner, Patent Owner also relies on the arguments it previously raised regarding claims 2 and 9, and elements 1[e] and 13[e], contending that “Morris and Ray do not teach or suggest generating exercise use data *in response* to the determination that [the] user is engaged with the driven operating member and *in response* to the determination that the user is not engaged.” PO Resp. 35 (citing Ex. 2004 ¶ 98). Patent Owner also asserts that claim 15 is not obvious because claim 13 is not obvious. *Id.* at 37 (citing PO Resp. § VI.A.12; Ex. 2004 ¶ 101).

²⁷ Petitioner also raises an additional argument regarding AAPA that we do not rely on in reaching our decision as to claim 15. *See* Pet. 49–50 (asserting it was admitted in the ’340 patent that treadmills were known to generate exercise use data regardless of whether or not a user was detected); PO Resp. 35–36 (responding to Petitioner’s additional argument based on AAPA); Pet. Reply 22–23 (responding to Patent Owner’s position as to AAPA); PO Sur-reply 18–19 (responding to Petitioner’s position as to AAPA from Petitioner’s Reply).

For the reasons provided by Petitioner and for the reasons explained above in the context of claims 1 (element 1[e]), 2, 9, and 13 (element 13[e]) (*see supra* §§ II.D.3.f (element 1[e]), II.D.4 (claim 2), II.D.10 (claim 9), II.D.14 (claim 13)), we agree with Petitioner that the Morris-Ray combination teaches the subject matter of claim 15 and we disagree with Patent Owner’s position for the same reasons. Accordingly, we find that Petitioner has shown that the Morris-Ray combination teaches or suggests the subject matter of claim 15.

17. Dependent Claim 16

Claim 16 depends from claim 13 and recites “[t]he method of claim 13, further comprising reporting, by the controller, the exercise use data to the communication interface only in response to the controller determining that the user is engaged with the operating member.” Ex. 1001, 10:24–27.

Petitioner relies on the same argument and evidence presented for claim 12 and elements 1[e] and 13[e]. *See* Pet. 50 (referring to Petitioner’s previous discussion). Petitioner also asserts “Ray explained the exercise use data would only be reported when the user was exercising on the treadmill.” *Id.*

Patent Owner asserts “[c]laim 16 is not obvious for the reasons provided above for claim 12 and elements 1[e], 8[g] and 13[e]. Claim 16 is also not obvious because claim 13 is not obvious.” PO Resp. 37 (citing PO Resp. § VI.A.12; Ex. 2004 ¶ 102).

We find Petitioner’s arguments and evidence persuasive for the same reasons discussed above pertaining to claim 12 and elements 1[e], 8[g], and 13[e]. *See supra* § II.D.3.f (element 1[e]), § II.D.9 (element 8[g]), § II.D.14

(element 13[e]). Accordingly, we find that the Morris-Ray combination teaches or suggests the subject matter of claim 16.

18. Dependent Claim 17

Claim 17 depends from claim 13 and recites “[t]he method of claim 13, further comprising determining, by the controller, an amount of user exercise time defined by a duration that the sensor detects engagement of the user with the operating member during movement of the operating member.” Ex. 1001, 10:28–32.

Petitioner relies on the same argument and evidence presented for claim 4. *See* Pet. 50 (referring to Petitioner’s discussion of claim 4).

Patent Owner asserts “[c]laim 17 is not obvious for the same reasons stated above for claim 4. Claim 17 is also not obvious because claim 13 is not obvious.” PO Resp. 37 (citing PO Resp. § VI.A.12; Ex. 2004 ¶ 103).

We find Petitioner’s arguments and evidence persuasive for the same reasons discussed above pertaining to claim 4. *See supra* § II.D.6 (claim 4). Accordingly, we find that the Morris-Ray combination teaches or suggests the subject matter of claim 17.

19. Dependent Claim 18

Claim 18 depends from claim 13 and recites “[t]he method of claim 13, wherein the known data parameter is recognized by the controller during operational use of the operating member.” Ex. 1001, 10:34–36.

Petitioner relies on the same argument and evidence presented for element 13[e]. *See* Pet. 50 (referring to Petitioner’s discussion of element 13[e]). Petitioner reiterates that “Morris compare[s] the detected signals to a baseline signal (known data parameter) caused by slight vibrations when the motor was driving the belt without a user.” *Id.* (citing

Ex. 1006 ¶ 31). Petitioner contends it would have been obvious to one of ordinary skill in the art “that Morris’ baseline signal, which was ‘caused *merely* by the electric motor driving the belt,’ was detected when the motor was running and the user was not on the treadmill, which meant it was obtained during operational use of the operating member (i.e., when the belt was running.)” *Id.* (citing Ex. 1002 ¶¶ 218–219).

Patent Owner asserts “[c]laim 18 is not obvious for the same reasons stated above for element 13[e]. Claim 18 is also not obvious because claim 13 is not obvious.” PO Resp. 38 (citing PO Resp. § VI.A.12; Ex. 2004 ¶ 104).

We find Petitioner’s arguments and evidence persuasive for the reasons provided by Petitioner and for the reasons discussed above pertaining to claim 13 as a whole and, specifically, element 13[e]. *See supra* § II.D.14 (claim 13). Accordingly, we find that the Morris-Ray combination teaches or suggests the subject matter of claim 18.

20. Dependent Claim 19

Claim 19 depends from claim 13 and recites “[t]he method of claim 13, wherein the reported exercise use data is defined as validated exercise use data.” Ex. 10:37–38.

Petitioner relies on the same argument and evidence presented for element 1[e] and claim 16. *See* Pet. 51 (referring to Petitioner’s discussion of element 1[e] and claim 16). Petitioner contends it would have been obvious to one of ordinary skill in the art “that such data was validated exercise use data because it represented valid exercise data that confirmed the user had exercised or was exercising.” *Id.* Additionally, Petitioner asserts “Ray explain[s] the reported exercise use data was validated because

‘[u]sing the validation process of the invention, the patient’s identity and exercise routine *[wer]e confirmed simultaneously*,’ which provides an additional level of validation for the reported data.” *Id.* (first alteration added) (quoting Ex. 1004, 8:26–28) (citing Ex. 1004, 13:24–30; Ex. 1002 ¶¶ 220–221).

Patent Owner asserts “[c]laim 19 is not obvious for the same reasons stated above for element 1[e] and claim 16. Claim 19 is also not obvious because claim 13 is not obvious.” PO Resp. 38 (citing PO Resp. § VI.A.12; Ex. 2004 ¶ 105).

We find Petitioner’s arguments and evidence persuasive for the reasons provided by Petitioner and for the reasons discussed above pertaining to element 1[e] and claim 16. *See supra* § II.D.3.f (element 1[e]), § II.D.17 (claim 16). Accordingly, we find that the Morris-Ray combination teaches or suggests the subject matter of claim 19.

21. Dependent Claim 20

Claim 20 depends from claim 13 and recites

[t]he method of claim 13, further comprising connecting the exercise apparatus with a remote location, communicating the exercise use data to the remote location, and maintaining communication between the exercise apparatus and an [sic] remote location while the operating member is driven by the motor and the user is determined by the controller not to be engaged with the operating member.

Ex. 1001, 10:39–45.

Petitioner relies on the same argument and evidence presented for claim 7. *See* Pet. 51–52 (referring to Petitioner’s discussion of claim 7). Petitioner reiterates, “[a]s explained earlier, the Morris-Ray treadmill established communications with a remote location, such as to a doctor,

wellness manager, or a remote storage device, to provide real-time exercise use data as the user was exercising.” *Id.* at 51 (citing Ex. 1004, 3:47–51, 5:49–52, 6:67–7:3, 7:4–10, 8:1–4, 13:20–24, 13:65–67). And, for the reasons discussed in the context of claim 7, Petitioner asserts it would have been obvious to one of ordinary skill in the art “to maintain communication with the remote location even when the user could not be detected, but the treadmill was still running.” *Id.* at 51–52 (citing Ex. 1002 ¶ 222).

Patent Owner asserts “[c]laim 20 is not obvious for the same reasons stated above for claim[s] 7 and 11. Claim 20 is also not obvious because claim 13 is not obvious.” PO Resp. 38–39 (citing PO Resp. § VI.A.12; Ex. 2004 ¶ 106).

We find Petitioner’s arguments and evidence persuasive for the reasons provided by Petitioner and for the reasons discussed above pertaining to claim 7. *See supra* § II.D.8 (claim 7). Accordingly, we find that the Morris-Ray combination teaches or suggests the subject matter of claim 20.

22. *Objective Indicia of Nonobviousness*

Neither party presents evidence of objective indicia of nonobviousness at this stage of the proceeding.

23. *Weighing the Graham Factors*

“Once all relevant facts are found, the ultimate legal determination [of obviousness] involves the weighing of the fact findings to conclude whether the claimed combination would have been obvious to an ordinary artisan.” *Arctic Cat*, 876 F.3d at 1361. On balance, considering the record presently before us, Petitioner has shown that the subject matter of claims 1–20 of the

'340 patent would have been obvious to one of ordinary skill in the art at the time of the invention.

E. Ground 2: Obviousness over Ray and AAPA
Ground 3: Obviousness over Yi

Petitioner asserts Ray in light of AAPA would have rendered the subject matter of claims 1–17, 19, and 20 obvious and Yi would have rendered the subject matter of claims 1, 4–6, 8, 9, and 12 obvious to one of ordinary skill in the art at the time of the invention. Pet. 52–75.

We have already found all challenged claims to be unpatentable (*see supra* § II.D), so we need not (and do not) address whether Petitioner has shown the claims to be unpatentable based on these alternative grounds. *See SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1359 (2018) (holding a petitioner “is entitled to a final written decision addressing all of the claims it has challenged”); *Boston Sci. Scimed, Inc. v. Cook Grp. Inc.*, 809 F. App’x 984, 990 (Fed. Cir. 2020) (non-precedential) (recognizing that the “Board need not address issues that are not necessary to the resolution of the proceeding” and, thus, agreeing that the Board has “discretion to decline to decide additional instituted grounds once the petitioner has prevailed on all its challenged claims”).

III. CONCLUSION²⁸

For the reasons discussed above, Petitioner has demonstrated, by a preponderance of the evidence, that claims 1–20 of the '340 patent are unpatentable.

²⁸ 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*, 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).

Our conclusions regarding the Challenged Claims are summarized below:

Claims Challenged	35 U.S.C. §	Reference(s) /Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–20	103	Morris, Ray	1–20	
1–17, 19, 20	103	Ray, AAPA ²⁹		
1, 4–6, 8, 9, 12	103	Yi ³⁰		
Overall Outcome			1–20	

IV. ORDER

Accordingly, it is:

ORDERED that claims 1–20 of U.S. Patent No. 11,227,340 B2 are determined to be unpatentable; and

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

²⁹ For the reasons explained above, we do not reach this alternative ground because we determine that claims 1–17, 19, and 20 are unpatentable based on Petitioner’s first ground.

³⁰ For the reasons explained above, we do not reach this alternative ground because we determine that claims 1, 4–6, 8, 9, and 12 are unpatentable based on Petitioner’s first ground.

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