

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*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

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.

An *inter partes* review may be instituted only if “the information presented in the petition . . . and any [preliminary] response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a) (2018). For the reasons given below, on this record, Petitioner has established a reasonable likelihood that it would prevail in showing the unpatentability of at least one of the Challenged Claims. Accordingly, we institute an *inter partes* review of the Challenged Claims on all grounds raised in the Petition.

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 3 (Patent Owner’s 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 3, 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).

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. We do not consider AAPA to be a reference or basis of the ground, but rather treat it as evidence presented in support of the ground. *See Qualcomm Inc. v. Apple Inc.*, 24 F.4th 1367, 1373–76 (Fed. Cir. 2022); USPTO Memorandum, Updated Guidance on the Treatment of Statements of the Applicant in the Challenged Patent in Inter Partes Reviews under § 311 (June 9, 2022), *available at* <https://www.uspto.gov/sites/default/files/documents/2022060912updatedAAPAmemo.pdf>.

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.

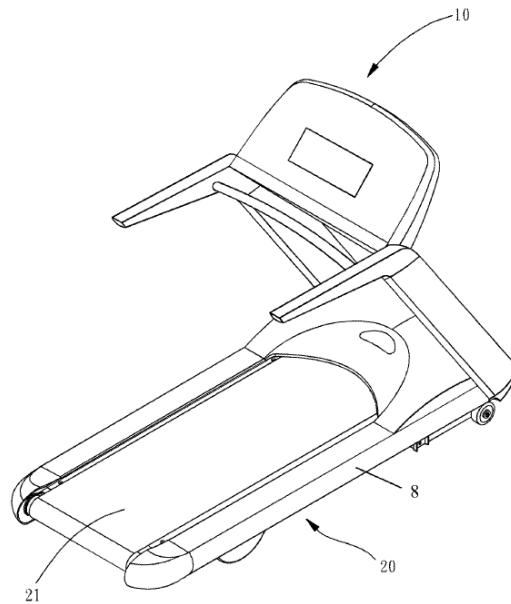


FIG. 1

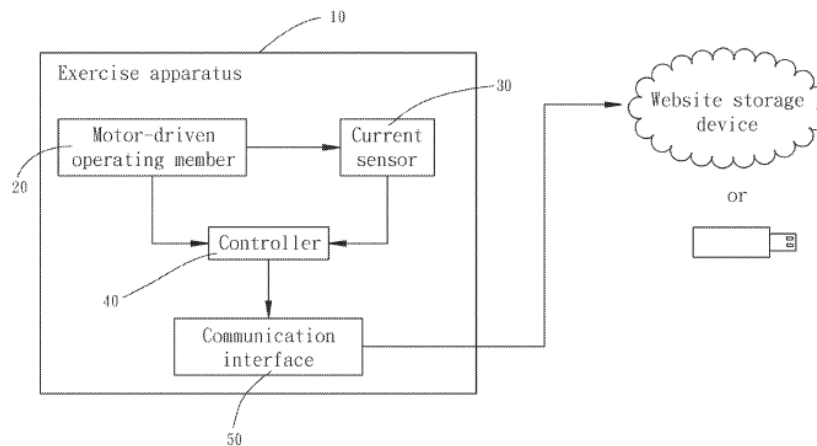


FIG. 2

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.

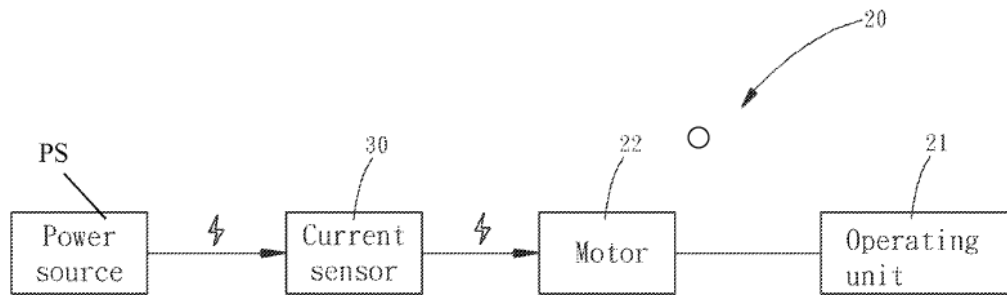


FIG. 3

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 exercise use data (e.g., 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.

G. Level of Ordinary Skill in the Art

Petitioner, supported by Mr. Rawl’s 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).⁶ 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 has not taken a position as to the level of ordinary skill in the art at this stage of the proceeding.

At this stage of the proceeding and on the present record, we find that Petitioner’s uncontested level of ordinary skill in the art is consistent with the level of ordinary skill in the art reflected by the ’340 patent and the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978). Therefore, we adopt Petitioner’s level of ordinary skill in the art, as articulated above, in our consideration of the issues presently before us.

⁶ Petitioner cites to Exhibit 1002 as “Rawls” throughout the Petition. *See, e.g.*, Pet. 11. In any future briefing, Petitioner shall cite to the exhibits using the exhibit number. *See* 37 C.F.R. § 42.104(b)(5) (noting that a statement of the precise relief requested for each claim challenged must identify the “exhibit number of the supporting evidence relied upon”). In other words, instead of citing to “Rawls, ¶ 31”—the citation should be to “Ex. 1002 ¶ 31.” The same is true for citations to other exhibits.

II. 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 has not taken a position as to claim construction at this stage of the proceeding.

On the present record, we need not construe any claim terms expressly because none are in dispute. *See Realtime Data*, 912 F.3d at 1375.

III. 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. 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.

1. Level of Ordinary Skill in the Art

The level of ordinary skill in the art at the time of the invention is discussed above. *See supra* § I.G.

2. 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, which is shown in Figure 1, reproduced below. Ex. 1006, code (57).

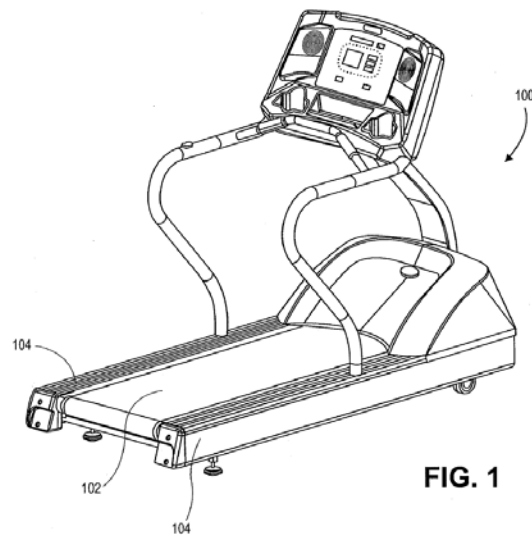


Figure 1 shows treadmill 100 comprising base 104 and treadmill belt 102 that glides over a floating deck surface of base 104 and that is driven by a belt driving mechanism (not shown). *Id.* ¶¶ 25, 26.

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

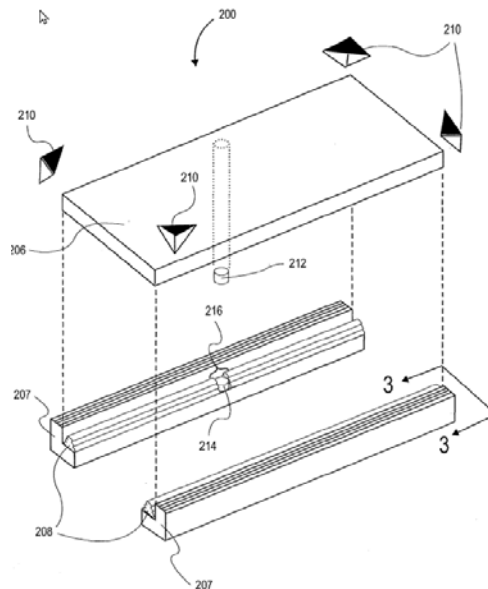


Figure 2 illustrates a user detection mechanism comprising magnets 212 attached to or embedded in deck 206 to interact with induction coil 214 fixed

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.

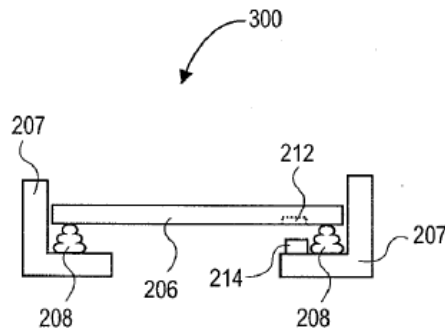


FIG. 3A

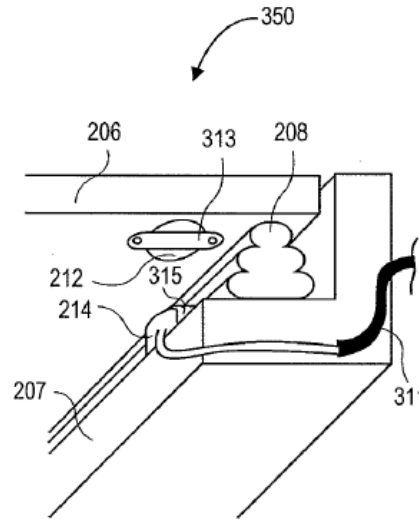


FIG. 3B

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.

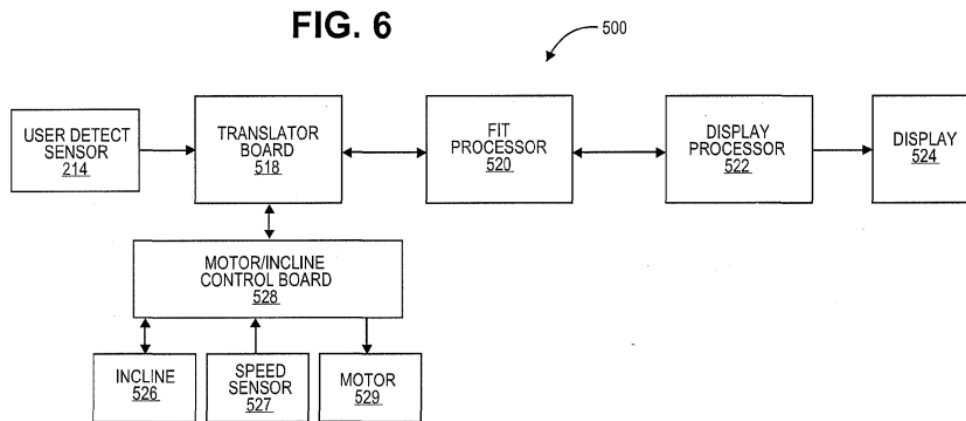


Figure 6 is a block diagram of treadmill information processing system 500 that comprises user detection sensors 214, translator board 518, FIT processor 520, display processor 522, display 524, motor/incline control board 528, incline controller 526, speed sensor 527, and motor driver 529. Ex. 1006 ¶¶ 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.

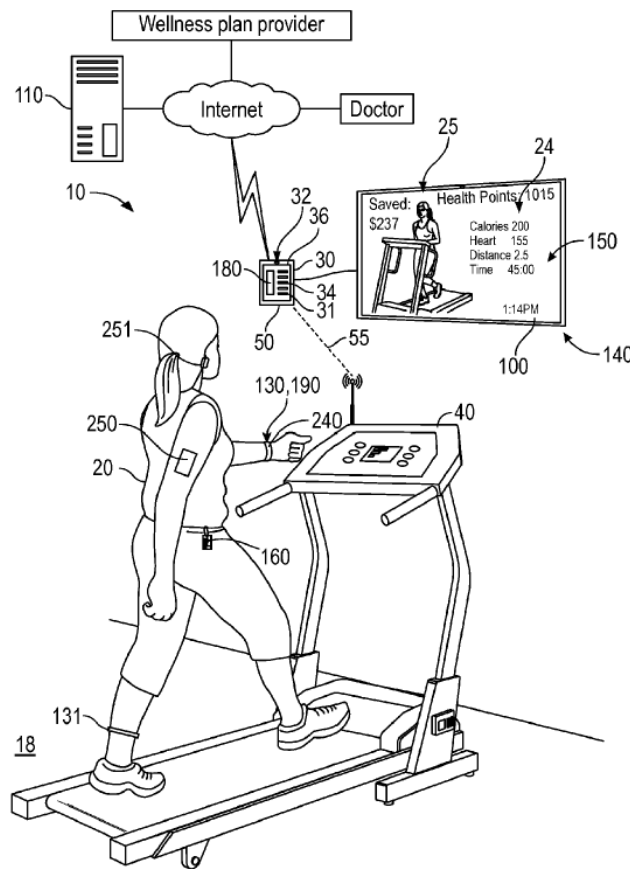


FIG. 1

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

3. Motivation to Combine and Reasonable Expectation of Success

Petitioner contends Morris and Ray describe exercise equipment (e.g., treadmills) that detect a user's presence while using the equipment and present the user's exercise data on a display while a user is exercising to motivate the user to exercise and improve the user's exercise experience. Pet. 12. Petitioner asserts one of ordinary skill in the art would have been motivated to combine the complementary teachings of Morris and Ray by incorporating Ray's camera and software instructions for validating user exercise data in Morris' treadmill apparatus with a reasonable expectation of success. *Id.* at 13. In particular, Petitioner contends Morris provides an express motivation to install and use Ray's camera for user detection by teaching that “its exercise equipment could be fitted with optical sensor(s).” *Id.* (citing Ex. 1006 ¶ 33). Additionally, Petitioner asserts Morris' treadmill includes an information processing system that processes sensor signals and includes virtual reality content on a screen displayed to the user. *Id.* (citing Ex. 1006 ¶¶ 32, 34–36, 50, 56–58, Figs. 6, 11–12C, claims 29–37). Thus, Petitioner contends “the signal processing and display system of Morris had the necessary capabilities to accommodate Ray's user detection/validation

software and implement, with a reasonable expectation of success, its functionalities that included producing and presenting the motivational image of the user exercising.” *Id.* at 13–14.

Additionally, Petitioner contends one of ordinary skill in the art would have been motivated to combine the teachings of Morris and Ray because of “Ray’s express teachings that its user validation/motivation technology could be ‘easily and affordably merged’ into a treadmill.” Pet. 14 (quoting Ex. 1004, 9:55–57). Petitioner asserts incorporating these features into Morris’ treadmill “would have been obvious and produced predictable results with a reasonable expectation of success.” *Id.* (citing Ex. 1002 ¶¶ 142–143).

Further, Petitioner asserts one of ordinary skill in the art would have been motivated to combine the teachings of Morris and Ray because the combination “would have improved the capabilities of Morris’ treadmill by adding Ray’s motivational image that showed a thinner image of the user as the intensity and duration of exercise increased, thus contributing ‘to the user’s sense of self-worth and self-esteem.’” Pet. 14 (citing Ex. 1004, 11:55–59, 13:50–57). According to Petitioner, although Morris teaches that exercise data can be “‘output to a computer or saved in memory’ for later access . . . , inclusion of Ray’s functionality to share the exercise data with a remote location in real time would have allowed ‘a more efficient flow of that data to . . . a physician or personal trainer.’” *Id.* at 14–15 (second alteration in original) (citing Ex. 1006 ¶ 50; Ex. 1004, 7:11–22; Ex. 1002 ¶ 144).

At this stage of the proceeding, Patent Owner does not challenge Petitioner’s argument and evidence directed to whether one of ordinary skill

in the art would have been motivated to combine the teachings of Morris and Ray with a reasonable expectation of success.

We find Petitioner’s arguments persuasive as to motivation to combine and reasonable expectation of success and supported on the record before us for the reasons explained by Petitioner.

4. Claim 1

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 disclosed 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).

At this stage of the proceeding, Patent Owner does not challenge Petitioner’s argument and evidence directed to the preamble of claim 1.

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.⁷

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

⁷ 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.

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).

At this stage of the proceeding, Patent Owner does not challenge Petitioner’s argument and evidence directed to element 1[a].

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).

At this stage of the proceeding, Patent Owner does not challenge Petitioner’s argument and evidence directed to element 1[b].

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).

At this stage of the proceeding, Patent Owner does not challenge Petitioner’s argument and evidence directed to element 1[c].

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—such as a magnet and coil, other magnetic sensors, and optical sensors. 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). Petitioner also asserts Ray’s camera “could sense small changes in the user’s facial color based on blood flow to obtain heart and respiratory rates of the user.” *Id.* at 20 (citing Ex. 1004, 16:47–50⁸).

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).

⁸ Ray teaches this aspect in column 15, lines 47–50, not column 16.

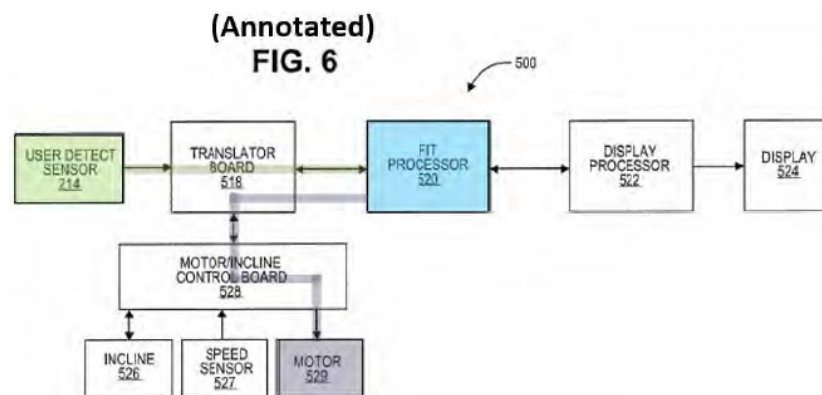
At this stage of the proceeding, Patent Owner does not challenge Petitioner’s argument and evidence directed to element 1[d].

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

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 provides an extensive analysis (covering ten pages of the Petition) asserting 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 [signal] processor [519].*”

Pet. 21 (alterations, with the exception of the last two, 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).

Petitioner next addresses the recitation of “validated exercise use data” in element 1[e]. Pet. 22–24. Petitioner asserts the ’340 patent and claims “describe ‘validated exercise use data’ as exercise data that is generated while the user is actually exercising on the exercise machine—i.e., when the user is engaged with the operating unit that is moving, such as when the user is walking/running on a treadmill while the belt is running.” *Id.* at 22 (citing Ex. 1001, 2:44–59). Petitioner contends that, “if the user is not detected, non-validated exercise data is generated.” *Id.* (citing Ex. 1001, 2:44–59). Petitioner provides additional discussion of the ’340 patent, and particularly, Figure 6’s “example of exercise use verification” in support of

its position. *Id.* at 23 (citing Ex. 1001, 6:55–58, Fig. 6); *see also id.* at 23–24 (also relying on claims 13 and 19 of the ’340 patent).

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:

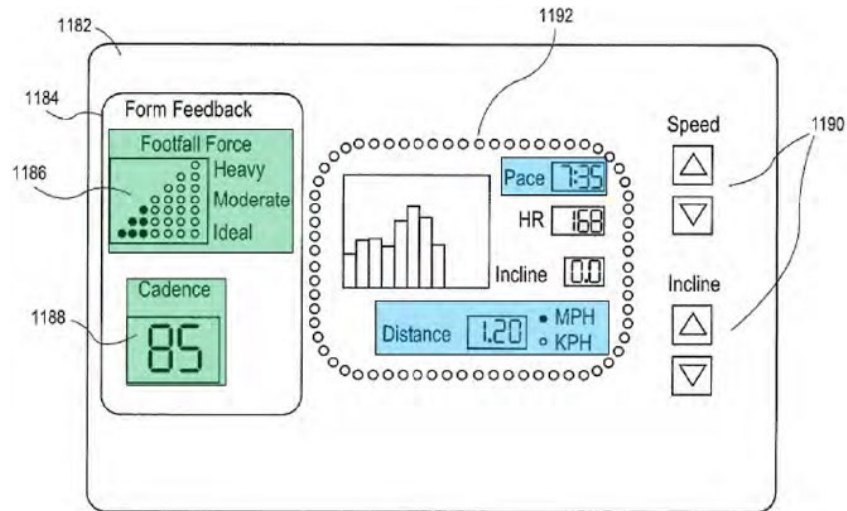


FIG. 11
(Annotated)

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:

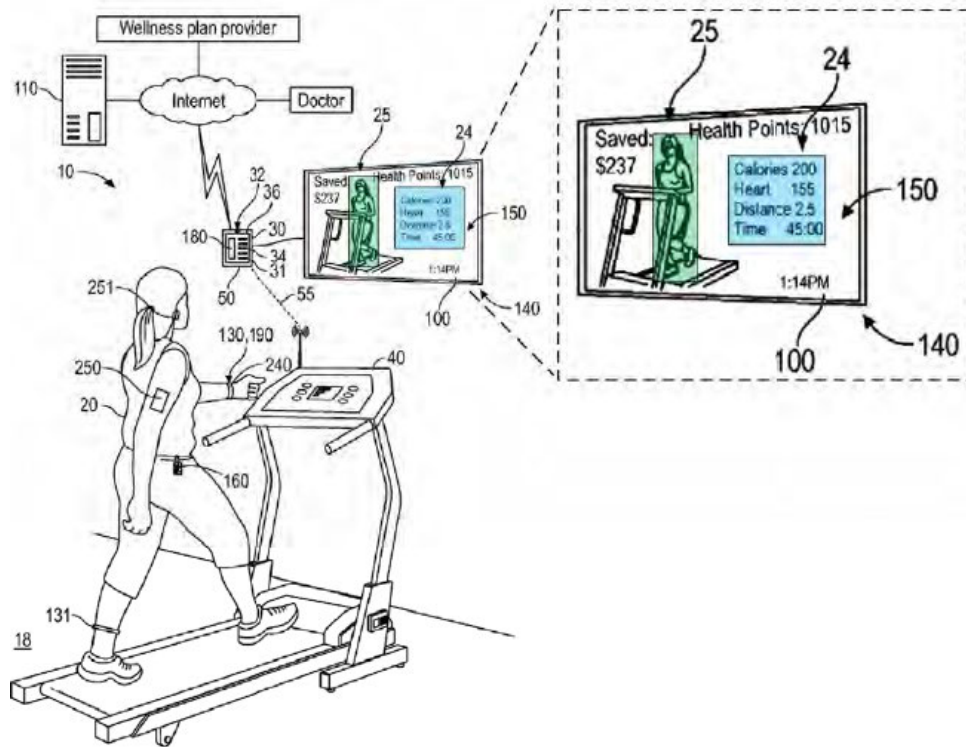


FIG. 1 (Annotated and Display Area Enlarged)

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.* (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 identify **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 described 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).

At this stage of the proceeding, Patent Owner does not challenge Petitioner’s argument and evidence directed to element 1[e].

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

5. *Claims 2–20*

Petitioner provides a similarly detailed analysis with argument supported on the present record showing how the combined teachings of Morris and Ray satisfy the subject matter of claims 2–20.

At this stage of the proceeding, Patent Owner does not challenge Petitioner’s argument and evidence directed to claims 2–20.

We have reviewed Petitioner’s detailed arguments and we find Petitioner’s arguments persuasive as to claims 2–20 and supported on the record before us for the reasons explained by Petitioner. *See, e.g.*, Pet. 30–52.

6. *Objective Indicia of Nonobviousness*

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

7. *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 established a reasonable likelihood that it would prevail in showing that the combination of Morris and Ray would have rendered the subject matter of claims 1–20 of the ’340 patent obvious to one of ordinary skill in the art at the time of the invention.

C. *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.

At this stage of the proceeding, Patent Owner does not challenge Petitioner’s contentions under these Grounds.

Because we have determined above that, at this stage of the proceeding and on the present record, the information presented in the Petition shows that there is a reasonable likelihood that Petitioner will prevail with respect to its challenge based on Morris and Ray (Ground 1), we need not address, in this Decision, Petitioner’s additional challenges. See 35 U.S.C. § 314(a); *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1356

(2018) (“Section 314(a) does not require the Director to evaluate every claim individually. Instead, it simply requires him to decide whether the petitioner is likely to succeed on ‘at least 1’ claim. Once that single claim threshold is satisfied, it doesn’t matter whether the petitioner is likely to prevail on any *additional* claims; the Director need not even consider any other claim before instituting review.”).

IV. CONCLUSION

For the reasons discussed above, Petitioner has demonstrated a reasonable likelihood that it would prevail in showing that at least one claim of the ’340 patent is unpatentable. Our analysis is based on the preliminary record developed thus far and may change after the record is developed fully, during trial.

V. ORDER

Accordingly, it is:

ORDERED that, pursuant to 35 U.S.C. § 314(a), *inter partes* review is instituted as to claims 1–20 of the ’340 patent on each ground set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the ’340 patent shall commence on the entry date of this Decision, and notice is hereby given of the institution of a trial.

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