

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PETITIONER ATHLETICA CANADA INC. and PETITIONER USA INC.
Petitioner

v.

NIKE, INC.
Patent Owner

Case IPR2023-00438
Patent 8,620,413 B2

NIKE, INC.'S PATENT OWNER SUR-REPLY

TABLE OF CONTENTS

I.	CLAIM CONSTRUCTION	2
II.	GROUND 1: AMANO	7
	A. Amano Does Not Disclose Limitation [C]	7
	B. Amano Does Not Disclose Limitation [D]	9
	C. Amano Does Not Disclose Limitation [E]	16
	D. Amano Does Not Anticipate Claims 5/7	16
III.	GROUND 2: MATSUMOTO	16
	A. Matsumoto Does Not Disclose Limitation [C]	16
	B. Matsumoto Does Not Disclose Limitation [D]	17
	C. Matsumoto Does Not Disclose Limitations [E], [F], Or [G]	24
	D. Matsumoto Does Not Anticipate Claims 5/7	24
IV.	GROUND 3: LUBELL AND CECI	25
	A. Petitioner Failed To Establish A Motivation To Combine Lubell and Ceci	25
	1. Lubell Teaches Away From Ceci	26
	2. No Reasonable Expectation Of Success	26
	B. Lubell + Ceci Does Not Disclose Limitation [D]	28
V.	GROUND 6-7: AMANO + GORMAN/FLACH	28
VI.	GROUND 4-5: LUBELL-CECI + GORMAN/FLACH, GROUND 8-9: MATSUMOTO + GORMAN/FLACH	31
VII.	PETITIONER’S CRITIQUE OF DR. BERGERON IS BASELESS	32
VIII.	CONCLUSION	33

TABLE OF AUTHORITIES

Cases	Page(s)
<i>Blue Calypso, LLC v. Groupon, Inc.</i> , 815 F.3d 1331 (Fed. Cir. 2016)	2, 15, 23
<i>GSI Technology, Inc. v. Cypress Semiconductor Corp.</i> , IPR2014-00121, 2015 WL 1643039 (PTAB Apr. 9, 2015)	24
<i>Intel Corp. v. Qualcomm Inc.</i> , No. 2022-1046, 2023 WL 4196901 (Fed. Cir. June 27, 2023).....	2, 22
<i>Kennametal, Inc. v. Ingersoll Cutting Tool Co.</i> , 780 F.3d 1376 (Fed. Cir. 2015)	1, 22, 23
<i>Net MoneyIN, Inc., v. Verisign, Inc.</i> , 545 F.3d 1359 (Fed. Cir. 2008)	15, 22, 24, 25
<i>Nidec Motor Corp. v. Zhongshan</i> , 851 F.3d 1270 (Fed. Cir. 2017)	1, 22, 23
<i>Stahls' Inc. v. Schwendimann</i> , IPR2020-00641, 2021 WL 4877584 (PTAB Oct. 1, 2021).....	24
<i>Unified Patents, Inc. v. Intellectual Ventures I LLC</i> , IPR2016-01643, 2018 WL 1511821 (PTAB Mar. 26, 2018).....	22, 23

EXHIBITS

Exhibit No.	Description
Ex. 2001	Declaration of Dr. Bryan Bergeron
Ex. 2002	U.S. Patent No. 5,769,755 (“Henry”)
Ex. 2003	U.S. Patent No. 6,163,718 (“Fabrizio”)
Ex. 2004	Excerpted Prosecution File History of U.S. Patent No. 8,620,413, June 6, 2012 Information Disclosure Statement by Applicant
Ex. 2005	Excerpted Prosecution File History of U.S. Patent No. 8,620,413, February 14, 2013 Receipt of IDS
Ex. 2006	U.S. Patent App. No. 2003/0073911 (“Yoshimura”)
Ex. 2008	Supplemental Declaration of Dr. Bryan Bergeron
Ex. 2009	Carl J. Caspersen, Kenneth E. Powell, and Gregory M. Christenson, “Physical Activity, Exercise, and Physical Fitness: Definitions and Distinctions for Health-Related Research,” Public Health Reports, Vol. 100, No. 2:126-131 (March-April 1985)
Ex. 2010	U.S. Department of Health and Human Services, <i>Physical Activity and Health: A Report of the Surgeon General</i> , Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion (1996)
Ex. 2011	Excerpts from William D. McArdle, Frank I. Katch, and Victor L. Katch, <i>Exercise Physiology - Energy, Nutrition, and Human Performance</i> , 5 th ed., Lippincott Williams & Wilkins (2001)
Ex. 2012	2023-09-27 Deposition Transcript of Dr. Kevin Lynch
Ex. 2013	2024-02-22 Deposition Transcript of Dr. Kevin Lynch

Petitioner failed to demonstrate that any Challenged Claim is unpatentable.

First, Petitioner’s construction vitiates the “level of physical fitness of a user.” Dr. Lynch admitted that each physical characteristic Petitioner relies on from Amano and Matsumoto (age, sex, weight, height, and stride length) “certainly *doesn’t equal a level* of physical fitness.” Ex. 2012, 148:5-149:21.¹ Recognizing this deficiency, Petitioner now reads out the fitness “level” entirely, and argues that Amano and Matsumoto’s predetermined protocols anticipate. But during prosecution, Lubell’s similarly predetermined protocol was found not to anticipate. Ex. 1015, 2-3.

Second, Petitioner did not rebut improperly combining distinct Amano and Matsumoto embodiments for anticipation, and instead maintains that devices with different circuitry, components, and displays “are not distinct,” because they use some common components (*i.e.*, a CPU), and because data output by one device could be manually input into the other. Paper 26, 10-11, 14-15. These are not anticipation arguments. Petitioner also misstates the law. *Id.* The Federal Circuit explained that *Kennametal* only addresses whether a reference’s disclosure of “combination possibilities” includes the alleged combination. *Nidec Motor Corp. v. Zhongshan*, 851 F.3d 1270, 1274 (Fed. Cir. 2017). But Matsumoto and Amano do

¹ All emphases added, unless otherwise specified.

not disclose any “combination possibilities.” And neither “reference *teaches* that the disclosed components or functionalities may be combined.” *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1344 (Fed. Cir. 2016).²

Third, Petitioner failed to demonstrate a motivation to combine Lubell and Ceci. Petitioner now argues Lubell’s preferred “protocol is a *maximal* test,” such that a POSITA allegedly would have been motivated to combine it with a supposedly “different” type of “suitable *submaximal*” protocol (also referenced by Lubell). Paper 26, 16. Except, Lubell exclusively describes its protocol as “submaximal,” as Dr. Lynch admits. Ex. 2013, 78:22-79:7.

Fourth, there is no motivation to combine for the dependent claim references. Petitioner admits it relied on wired devices from the primary references, and Dr. Lynch admits that none of those references disclose having any of the problems that he opines Gorman and Flach’s wireless teachings are directed to solving.

I. CLAIM CONSTRUCTION

Petitioner’s construction is unsupported, and vitiates the “level of physical fitness of a user.” Paper 26, 1-4.

² By maintaining that they are not distinct, Petitioner actually waived any argument for combining Amano or Matsumoto’s embodiments. *Intel Corp. v. Qualcomm Inc.*, No. 2022-1046, 2023 WL 4196901 at *4 (Fed. Cir. June 27, 2023) (we “need not consider” whether a POSITA “would combine the embodiments as arranged in the claims” because “[b]efore the Board, Intel only advanced its theory that Figures 5 and 6 of Kwak disclosed a single embodiment”).

Petitioner relies on Caspersen, which states “no person has no fitness—all are active or fit to greater or lesser degrees.” Paper 26, 1 (citing Ex. 2009, 130). Petitioner then infers from Caspersen that “an exertion level that is adaptive to a user’s physical fitness would necessarily be adaptive to the user’s level of physical fitness,” simply excising “level.” *Id.*; (and ignoring that Caspersen itself explains peoples’ “level of physical fitness” “ranges from low to high,” Ex. 2009, 128).

In applying its construction, Petitioner then argues that Amano (for example) discloses limitation [C], because its protocol is purportedly “adaptive to a user’s physical fitness, as indicated by physical attributes such as the user’s stride length and weight,” without identifying any fitness “level.” *Id.*, at 4. But Dr. Lynch previously admitted that weight “certainly doesn’t equate,” and stride length is “not equated,” to a level of physical fitness. Ex. 2012, 148:5-149:16. Thus, while Dr. Lynch claims it was not *his* intention to remove the fitness “level” (Ex. 2013, 42:5-12), Petitioner is clearly removing the fitness “level” in *applying* its construction.

Petitioner’s construction contravenes the intrinsic record. During prosecution, the applicant explained what the term means, by contrasting to Lubell:

“Lubell automatically executes a predefined exercise test protocol that is not based on a level of physical fitness of a user. . . . For example, Lubell’s prescribed 4 miles per hour *starting* speed may, for some users, be considered difficult to achieve, or may, in other instances, be beyond the capabilities of some users.” Ex. 1014, 8 (emphases original).

A “level of physical fitness” thus relates to how “difficult” a user finds exertion levels. The specification explains that “heart rate” and “breathing” can be used to determine a user’s level of physical fitness. *E.g.*, Ex. 1001, 15:10, 15:44-16:55; Ex. 2008, ¶28. Dr. Lynch *agrees*, opining that the specification “describes setting an exertion level based on cardiorespiratory endurance, measured by a user’s physical attributes, such as the user’s heart rate or breathing.” Ex. 1018, ¶8.³ But nowhere did the patentee disclaim the fitness “level,” or redefine the term to mean attributes such as weight or stride length, which Dr. Lynch admits are not fitness “levels.”

Furthermore, the applicant never described the “exertion levels” as “adaptive to” a user’s “level of physical fitness.” Instead, the applicant stated that because Lubell’s overall “*exercise test protocol* is predetermined, *it is not adaptive* to the physical fitness of a user.” Ex. 1014, 8. This statement does not support changing the claim language “based on a level of physical fitness of a user,” to merely “adaptive to” it. Dr. Lynch’s reliance on Matsumoto must be recognized and rejected for what it is—an improper attempt to change the term’s meaning to fit the

³ Petitioner’s argument that Nike’s proposal is “not found in the intrinsic record,” and was “imported . . . to overcome the instituted art,” is false and belied by its own expert. Paper 26, 4. “Cardiorespiratory endurance” is merely shorthand for assessments involving “heart rate” and “breathing” (*e.g.*, Ex. 2008, ¶24, citing Ex. 2009, 128-29)—the exact metrics Dr. Lynch agrees the specification discusses. Ex. 1001, 15:44-16:55; Ex. 2013, 11:8-20.

asserted prior art.⁴ Ex. 1018, ¶12. In contrast, Dr. Bergeron testified that Nike’s “takes into account” has the same meaning as “based on.” Ex. 1017, 73:13-22. And Dr. Lynch testified that if those phrases have the same meaning, he agrees with that aspect of Nike’s construction. Ex. 2013, 12:12-25. In fact, Dr. Lynch testified that “[i]n the context of this patent,” “is adaptive to” also has the same meaning. *Id.*, 36:19-37:7.

Ignoring the experts’ agreement, Petitioner resorts to non-sequiturs including BMI and “high-risk obesity.” Paper 26, 2-3. But even if BMI or obesity risk could be used to determine a “level of physical fitness,” those metrics are not relevant here because *none of the grounds rely on BMI or obesity risk*.⁵

In any case, Petitioner is wrong that Nike “seeks to” “arbitrarily exclude certain physical attributes from the scope of the claim.” Paper 26, 3-4. There is nothing “arbitrary” about it. Dr. Bergeron distinguished “physical *characteristics*,” such as height, weight, stride length, sex, and age—which Dr. Lynch agrees do not equate to a level of physical fitness. And where Dr. Lynch opines that “weight” is “related to a level of physical fitness,” he actually cites a discussion of “body mass

⁴ *E.g.*, Matsumoto’s prescribed protocol, which is described as “suited to” users of different ages and sex, but not “based on” a user’s fitness level. Ex. 1003, 4:33-35.

⁵ While Petitioner refers to “BMI (reflecting weight and height)” for Amano (Paper 26, 5), Amano is not cited, because Amano does not mention BMI. Notably, Dr. Lynch does not opine that Amano mentions BMI. Ex. 1018, ¶¶20-24. Matsumoto also does not mention BMI, and neither reference mentions obesity risk.

index,” not weight. Ex. 1018, ¶12 (citing Ex. 2010, 35). Yet Dr. Lynch admitted that BMI cannot be calculated based on weight alone. Ex. 2013, 49:10-16.

Finally, Nike’s construction is not a “wholesale revision” or a “rewrite.” Paper 26, 2-3. Dr. Bergeron testified that it is “plain and ordinary,” with “no special meaning.” Ex. 1017, 80:4-16. Petitioner’s selective quotes from his testimony mislead about Nike’s position. When repeatedly asked confusing questions about the “difference” between Nike’s construction and the plain claim language, Dr. Bergeron contrasted to *Petitioner’s* interpretation. Thus, he meant *Petitioner* is misreading the term as “sterile and not tied to any particular person,” where exertion levels “do not take into account a particular user’s condition.” *Id.*, 61:17-21, 74:1-11. But fully consistent with Nike’s proposal (and his declaration), Dr. Bergeron had already testified that “the preferred definition which we [Nike] offer . . . it’s actually directly tied to the particular user, to their particular – their specific condition, specific level of fitness . . . It’s not just an arbitrary level . . . or again, sterile.” *Id.*, 59:13-60:1. Addressing Petitioner’s misinterpretation of the plain claim language is why Nike proposed the plain and ordinary meaning in the first place, and Petitioner’s obfuscation in Reply only confirms why that was necessary.

II. GROUND 1: AMANO

A. Amano Does Not Disclose Limitation [C]

Amano does not disclose limitation [C] under any construction. Dr. Lynch admits this limitation requires a “specific” user’s “level of physical fitness” (Ex. 2013, 31:22-32:3), yet he agrees Amano’s protocol prompts running pitch increases of “10% for all users.” Ex. 1018, ¶24. Amano’s protocol therefore cannot be “based on,” “taking into an account,” or “adaptive to” “a level of physical fitness of a user.”

First, there is no dispute that Amano’s pitch increase “percentage is 10% for all users.” Paper 26, 7; Ex. 1018, ¶24. Nor is it disputed that “pitch” means “steps per minute.”⁶ And Petitioner acknowledges that Amano does not **prompt** the user’s initial running speed (limitation [C] requires “prompt[ing] a user”), but instead only “detects the initial pitch of the user running.” *Id.* Therefore, when Amano prompts a user, it only does so in 10% increments, whether the initial level or increased levels are easy or difficult for a specific user. Thus Amano’s protocol is not “based on a level of physical fitness of a user”—nor does it “depend on” the user’s fitness level (in Dr. Lynch’s words),⁷ because the same increases apply to all users.

⁶ Even if “pitch” relates to height or stride length (in that steps/time may be impacted by a user’s leg length), the experts agree that neither height nor stride length indicates a “level of physical fitness.” Ex. 2008, ¶¶21-26; Ex. 2012, 137:6–9, 148:5–149:21.

⁷ Dr. Lynch testified that “based on,” “takes into account,” and “adaptive to,” “for all of them, should mean that the exertion level depends on” a level of physical fitness of a user. Ex. 2013, 23:10-15.

The Reply’s discussion of “exercise intensity” is a non-sequitur. Paper 26, 5-8. Dr. Lynch agrees that “exercise intensity” is a measure of “power” (Ex. 1018, ¶14), and that exercise intensity is calculated by multiplying “the user’s weight by their speed,” which is “the product of the user’s *pitch* and stride length.” *Id.* In other words, Amano calculates exercise intensity after a user is already running at a given pitch, as shown in Dr. Lynch’s steps below, where the pitch “has to be detected first, and then you put it into an equation” (Ex. 2013, 52:23-53:5; Ex. 1018, ¶16):

16. The steps of Amano’s “calculation display processing” are:

Step Sa1	determine the user’s pulse rate (beat rate) (<i>id.</i> , 12:9-11)
Step Sa2	detect the running pitch of the user (<i>id.</i> , 12:12-14) (same as step S9)
Step Sa3	calculate exercise intensity as the product of the pitch (detected in step Sa2), stride length, and body weight (<i>id.</i> , 12:15-20)

Thus, even setting aside Amano’s usages of “exercise intensity” in different contexts (Ex. 2008, ¶¶40-42), Amano cannot disclose this limitation. When Amano “sounds an alarm to increase running pitch . . . by 10% (Ex. 1018, ¶18), that pitch in no way utilizes a user’s weight or stride length. Dr. Lynch’s opinion that “at least weight” is “an attribute” that relates to “a level of physical fitness” is thus irrelevant, because Amano does not use weight to set the running pitches. Ex. 1018, ¶21.⁸

⁸ Petitioner’s argument “that exercise intensity is proportional to pitch” is also a non-sequitur. Paper 26, 8. Even if proportional, that has no impact on the protocol, which only prompts users to increase their “pitch” (*i.e.*, steps/minute).

Finally, it does not matter that the numerical amount of Amano's 10% pitch increase is based on the initial pitch (Paper 26, 8), because the initial pitch (i) is not prompted, and (ii) is not based on a user's "level of physical fitness" either. Ex. 1018, ¶68. Amano is analogous to Lubell's protocol distinguished in prosecution, which also started at a speed of unknown difficulty for the user. Ex. 1014, 8.

B. Amano Does Not Disclose Limitation [D]

Amano does not disclose limitation [D] as arranged in the claims.

Petitioner admittedly relies on the fourth embodiment for alleged "heart rate zones." Paper 26, 9; Ex. 1018, ¶68. But Petitioner failed to demonstrate that embodiment's "upper" and "lower limit" pulse rate limits are "based on first heart rate measurements received . . . while the user exercises at the plurality of successive exertion levels." In fact, Dr. Lynch agrees that Amano teaches otherwise, because a user presses switches up or down until matching "the display to his own VO_{2max} ." Ex. 1002, 20:5-30; Ex. 2013, 61:18-19. Then, the device "reads out the pulse rate corresponding to this VO_{2max} from the pulse rate table," and sets the upper and lower limits by multiplying by 120% and 80%. Ex. 1002, 20:5-30.⁹ No "heart rate measurements" are involved, as Dr. Lynch admits. Ex. 2013, 65:3-17.

⁹ Petitioner's argument that Amano determines a VO_{2max} zone "based on *the user's* pulse rate" is wrong. Paper 26, 10 (citing Ex. 1002, 19:40-43, 20:14-30). Amano uses a table storing an "average person's" pulse rates, not a "user's pulse rate." *Id.*

Petitioner also maintains that the embodiments are not distinct, because a user could take the VO_{2max} number calculated by the first embodiment, and manually input that number into the fourth embodiment. Paper 26, 10-11; Ex. 1018, ¶25-26 (citing Ex. 1002, 19:49-51). That is not an anticipation argument. For his part, Dr. Lynch testified that a POSITA could supposedly implement a “modification” to the fourth embodiment to make it “import” data from the first embodiment. Ex. 2013, 61:18-62:24. That’s not an anticipation argument either.

Dr. Lynch’s opinions also are not credible. He offered no technical analysis regarding how Amano’s embodiments could supposedly work together, instead parroting Petitioner’s argument that “Amano explicitly connects” them. Ex. 1018, ¶27. But his opinion shifted in cross-examination. When confronted with Figure 5 (first embodiment) and Figure 16 (fourth embodiment), Dr. Lynch acknowledged that the devices have, for example, different buttons and switches, “different interfaces,” and “different physical instantiations.” Ex. 2013, 58:18-60:12. Thus it is not disputed that Amano discloses distinct embodiments (*e.g.*, in these figures):

Amano – First Embodiment (Ex. 1002, 3:65-4:17, 6:4-16:14)

FIG. 5

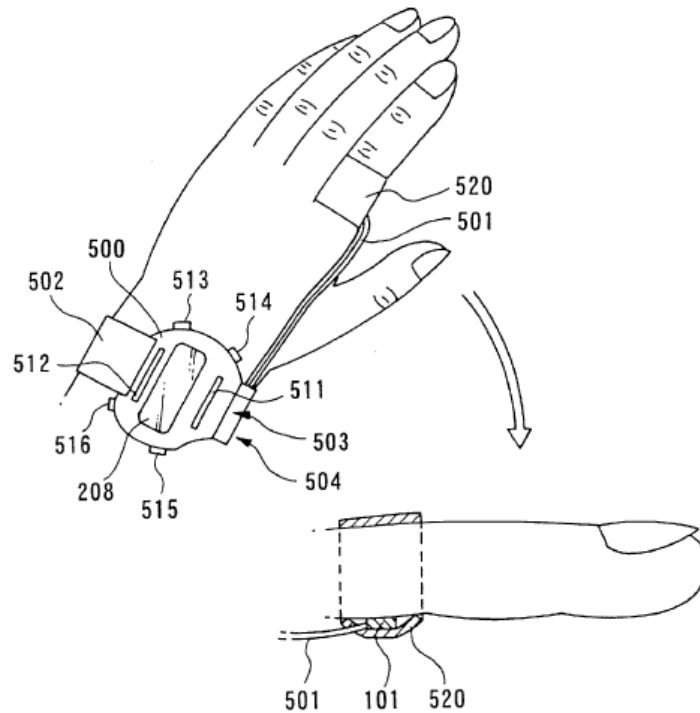
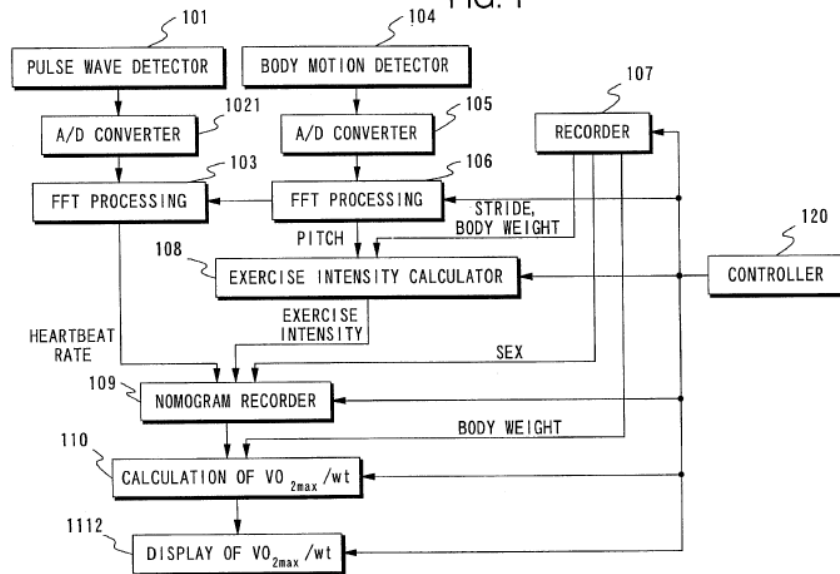
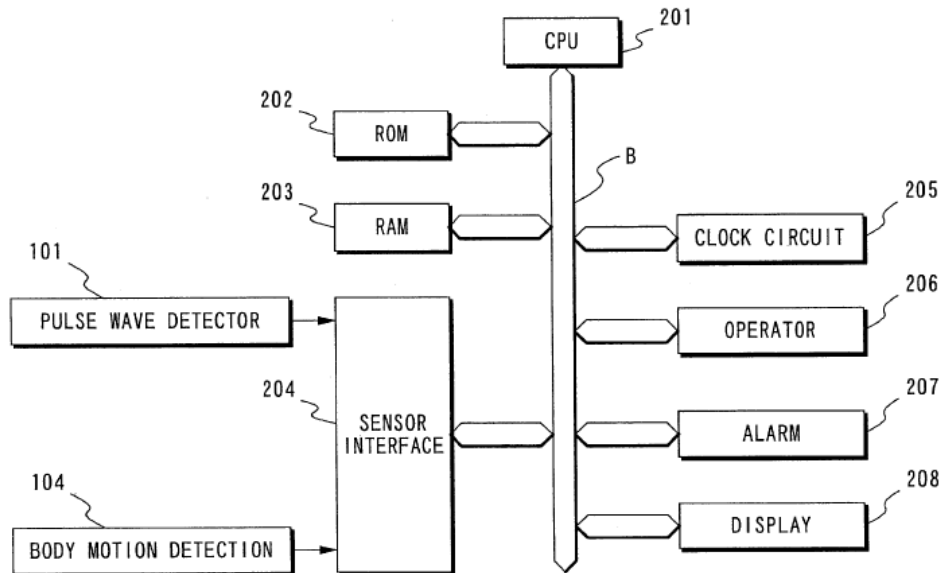


FIG. 1



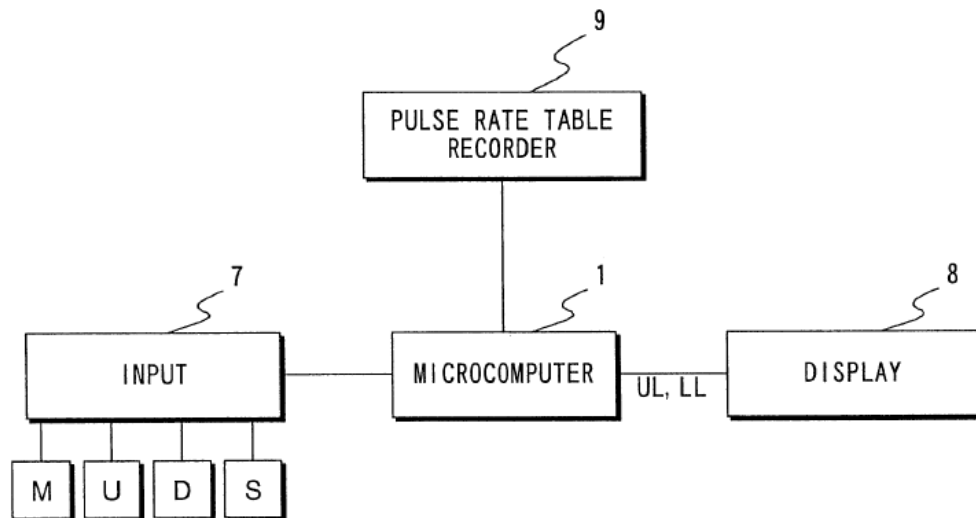
Amano – First Embodiment (Ex. 1002, 3:65-4:17, 6:4-16:14)

FIG. 2



Amano – Fourth Embodiment (Ex. 1002, 4:31-5:8, 19:8-26:34)

FIG. 13

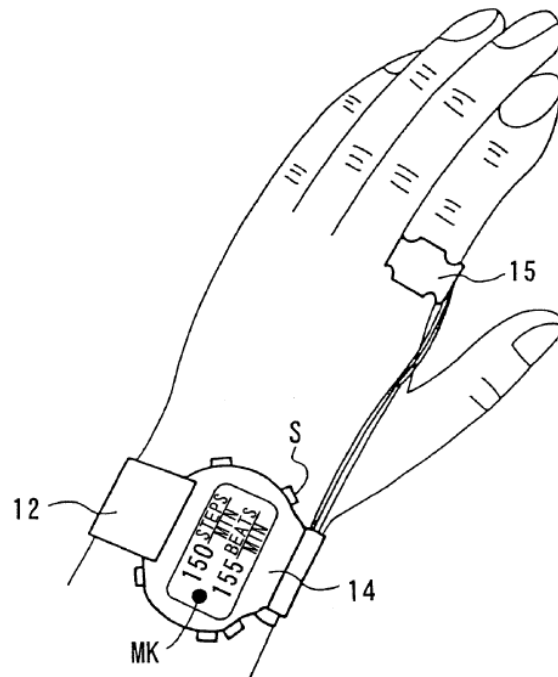


Amano – Fourth Embodiment (Ex. 1002, 4:31-5:8, 19:8-26:34)

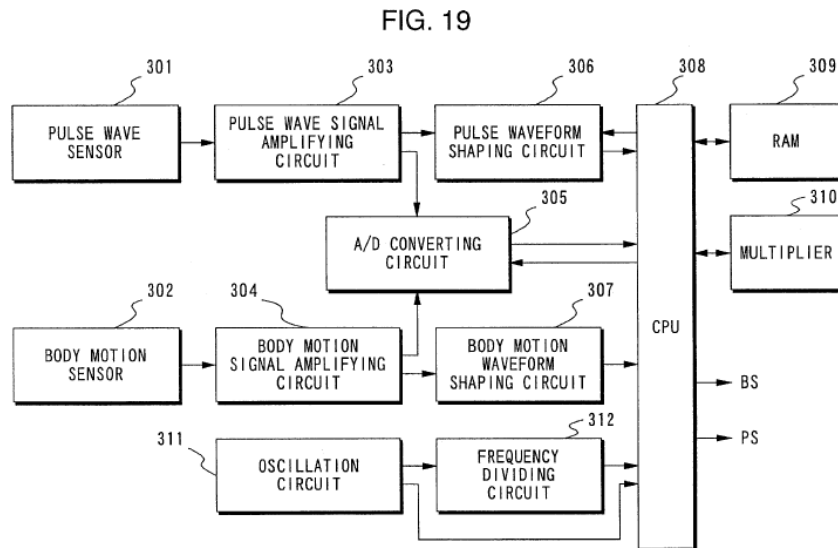
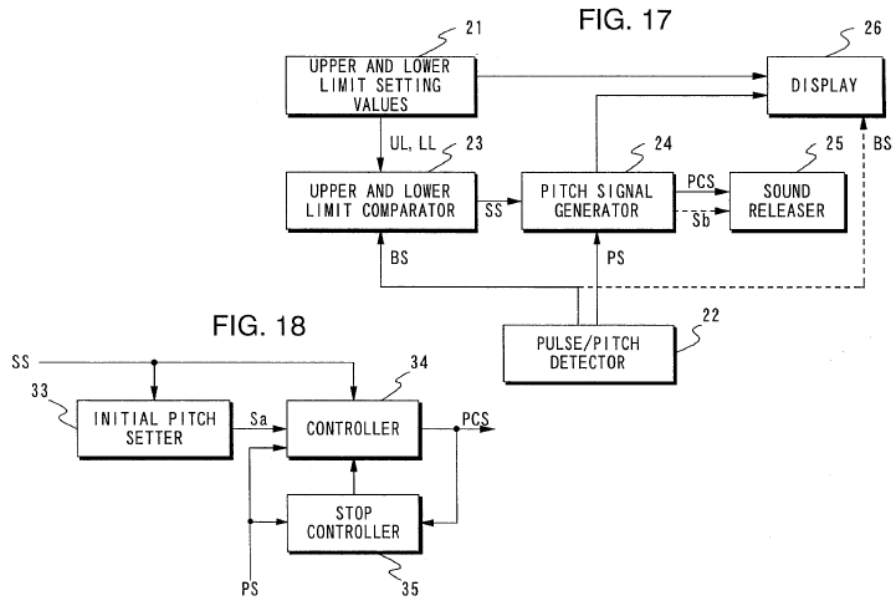
FIG. 14

VO_{2max}	36	37	38	39	40	41	42
PULSE RATE	105	110	115	120	125	130	135

FIG. 16



Amano – Fourth Embodiment (Ex. 1002, 4:31-5:8, 19:8-26:34)



Amano – Eighth Embodiment (Ex. 1002, 5:65-67, 38:22-40:3)

FIG. 51

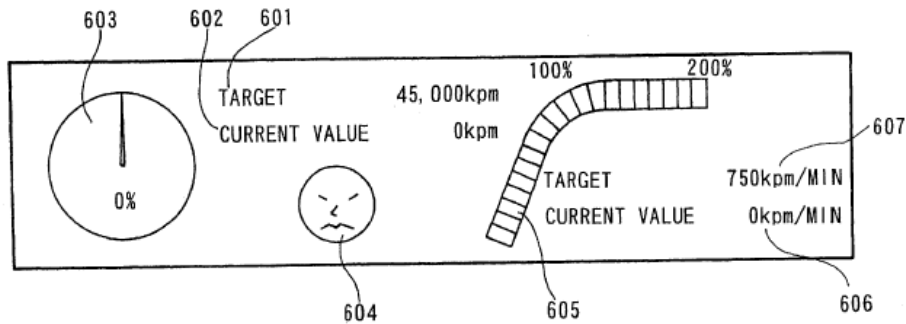


FIG. 52

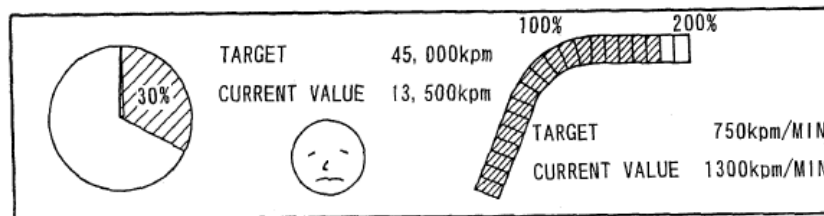
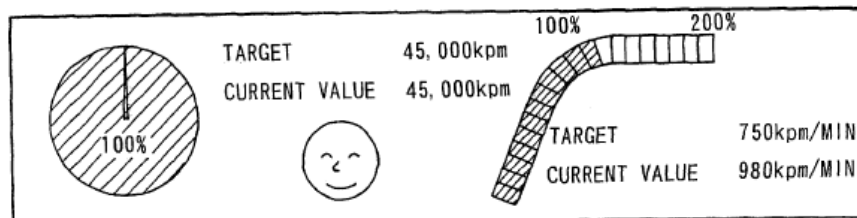


FIG. 53



Petitioner made no effort to demonstrate how the circuitry and components of the fourth embodiment (e.g., Figs. 13-14, 16-19) could be modified or used with the first (e.g., Figs. 1-2, 5). Paper 26, 10-11. Nor did Petitioner identify anything from Amano that “*teaches* that the disclosed components or functionalities *may be combined*.” *Blue Calypso*, 815 F.3d at 1344. Accordingly, Petitioner failed to prove

that Amano discloses this limitation in the specific “arrange[ment] as in the claim.”

Net MoneyIN, Inc., v. Verisign, Inc., 545 F.3d 1359, 1371 (Fed. Cir. 2008).

C. Amano Does Not Disclose Limitation [E]

The Reply did not address limitation [E], where Petitioner also combined distinct Amano embodiments. Paper 22, 37-38.

D. Amano Does Not Anticipate Claims 5/7

Because Amano does not anticipate Claim 1, it does not anticipate Claims 5/7.

III. GROUND 2: MATSUMOTO

A. Matsumoto Does Not Disclose Limitation [C]

Matsumoto does not disclose limitation [C] under any construction. Petitioner did not refute that Matsumoto selects from protocols standardized by age, sex, and weight (Paper 26, 11-12), which Dr. Lynch admitted do not correspond to “a level of physical fitness of a user.” Ex. 2012, 148:5-149:21. Accordingly, Matsumoto’s standardized protocols cannot be “based on,” “taking into an account,” or “adaptive to” “a level of physical fitness of a user.” Dr. Lynch now opines that Matsumoto’s protocols are not “one-size-fits-all,” but he cited no support. Ex. 1018, ¶35. Nor could he, because it cannot be disputed that Matsumoto assigns two 30-year-old men weighing 180 pounds the *same protocol*, even if one is an Olympic athlete and the other is a non-exerciser.

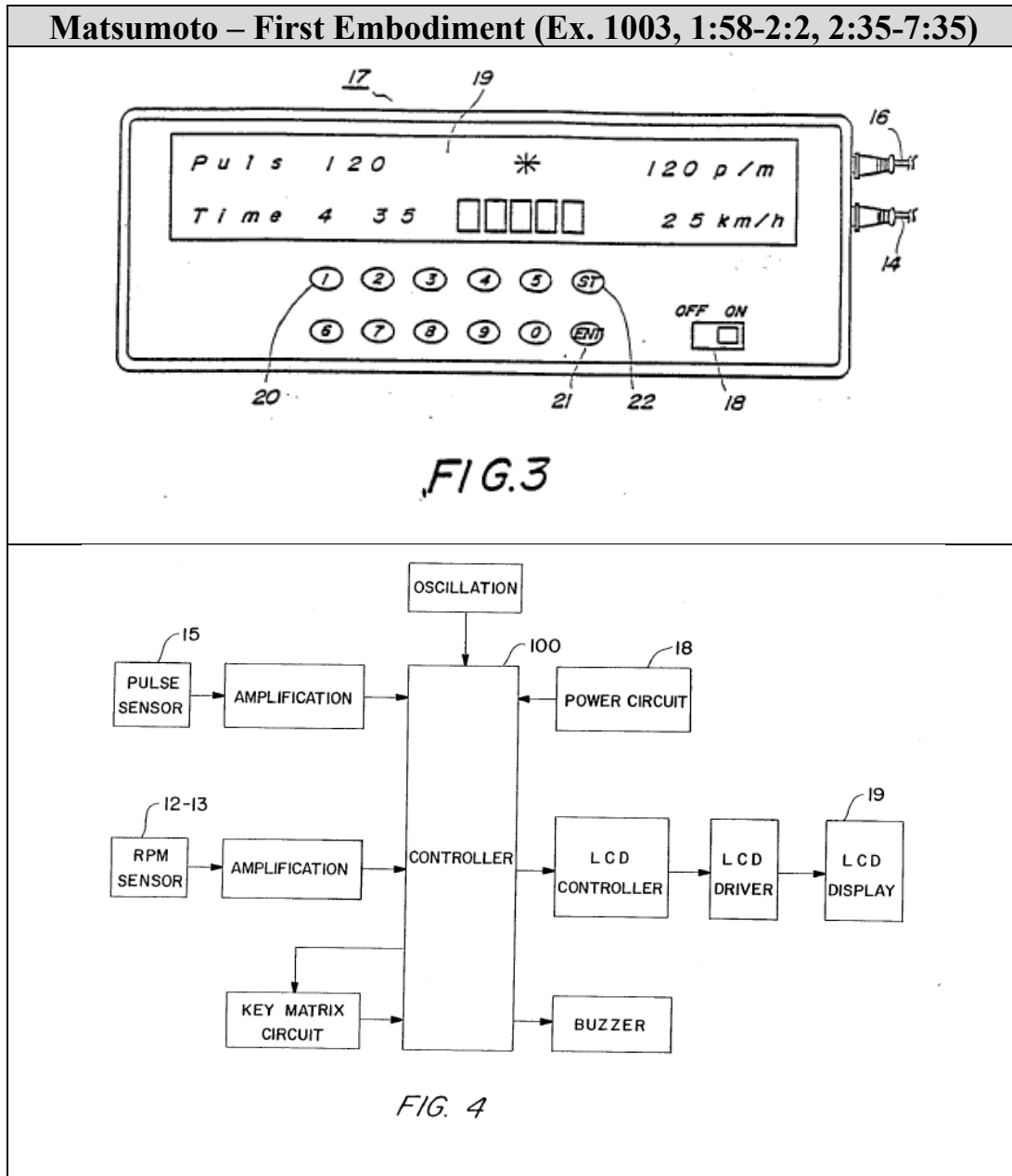
Furthermore, Petitioner’s argument that “the claims do not require unique exercise programs for each user” is unsupported by Dr. Lynch, and a red herring.

Paper 26, 12. First, Dr. Lynch admitted this limitation requires a “specific” user’s “level of physical fitness.” Ex. 2013, 31:22-32:3. But in any case, while it is theoretically possible that two users with identical fitness levels could be prompted to exercise at the same (*i.e.*, non-unique) exertion levels, Matsumoto is missing *any* disclosure connecting its protocol to a user’s specific physical fitness level. Matsumoto does not know a given user’s specific physical fitness level, and therefore its protocols cannot be “based on” a user’s specific physical fitness level.

B. Matsumoto Does Not Disclose Limitation [D]

As an initial matter, limitation [D] requires “heart rate zones” determined “based on first heart rate measurements,” *plural*, received “while the user exercises at the plurality of successive exertion levels,” which no embodiment discloses. Paper 22, 44-45. The Reply offers no rebuttal. Paper 26, 13-15. Dr. Lynch now opines that the second embodiment’s use of an “exercise rating” discloses those “measurements,” which is unsupported because he does not demonstrate that “exercise rating” is actually used. Ex. 1018, ¶38. But even if he had, Matsumoto still does not disclose multiple “heart rate measurements” received “while the user exercises,” because “exercise rating” involves a “[p]ulse while exercising,” *singular*. *Id.* (citing Matsumoto). Dr. Lynch changed that quote to “pulses while exercising,” *plural*, without any support from the reference. *Id.*

In any case, Petitioner did not rebut that it improperly combined embodiments. Paper 26, 13-15. Petitioner's insistence that Matsumoto's embodiments are "the same embodiment" (*id.*) flatly contradicts the reference, which shows two machines with distinct structures, displays, and circuitry:



Matsumoto – First Embodiment (Ex. 1003, 1:58-2:2, 2:35-7:35)

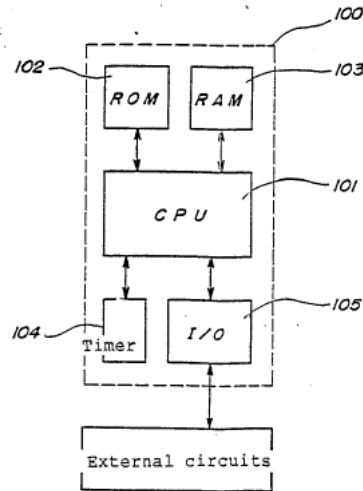


FIG.5

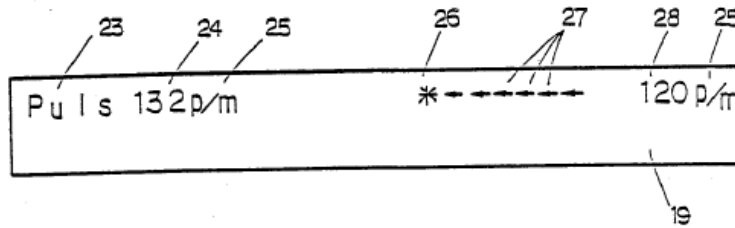


FIG.9

Matsumoto – Second Embodiment (Ex. 1003, 2:3-12, 7:36-10:68)

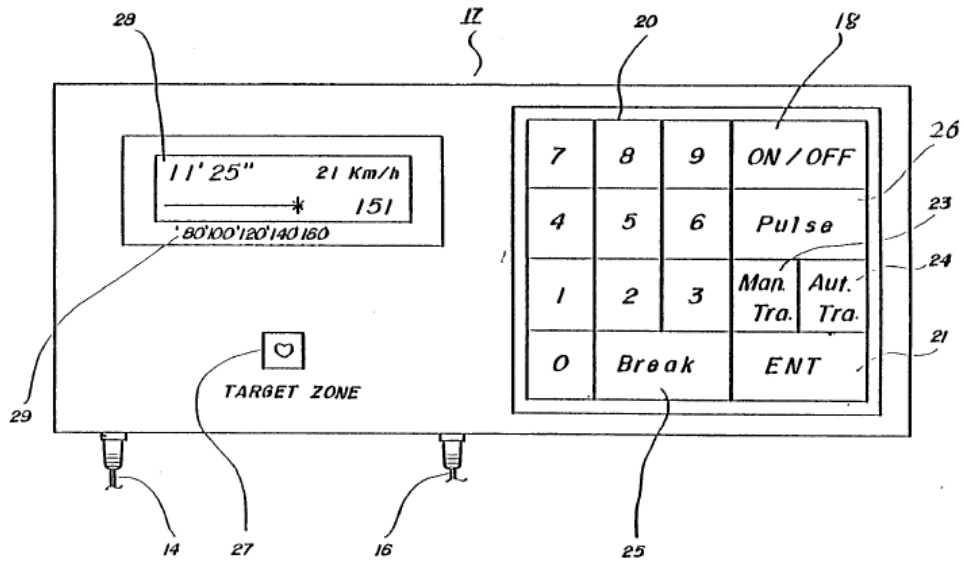


FIG. 10

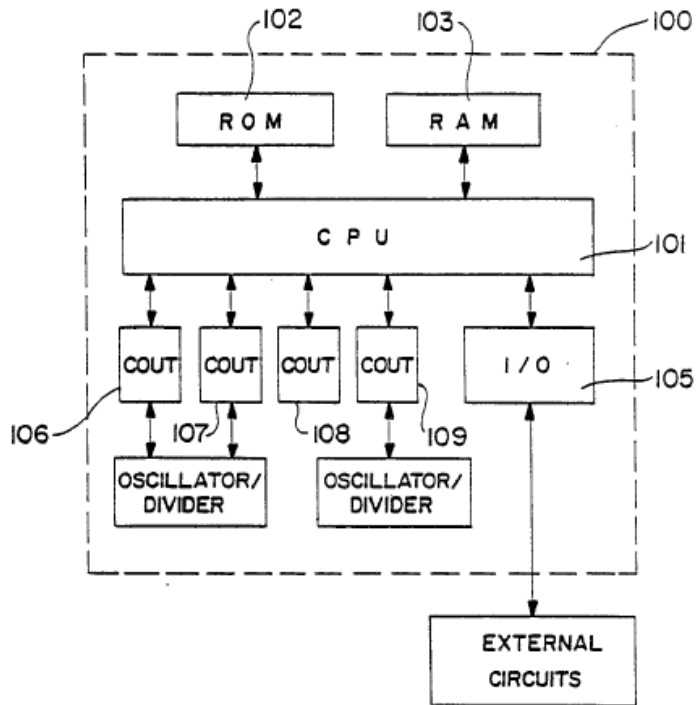
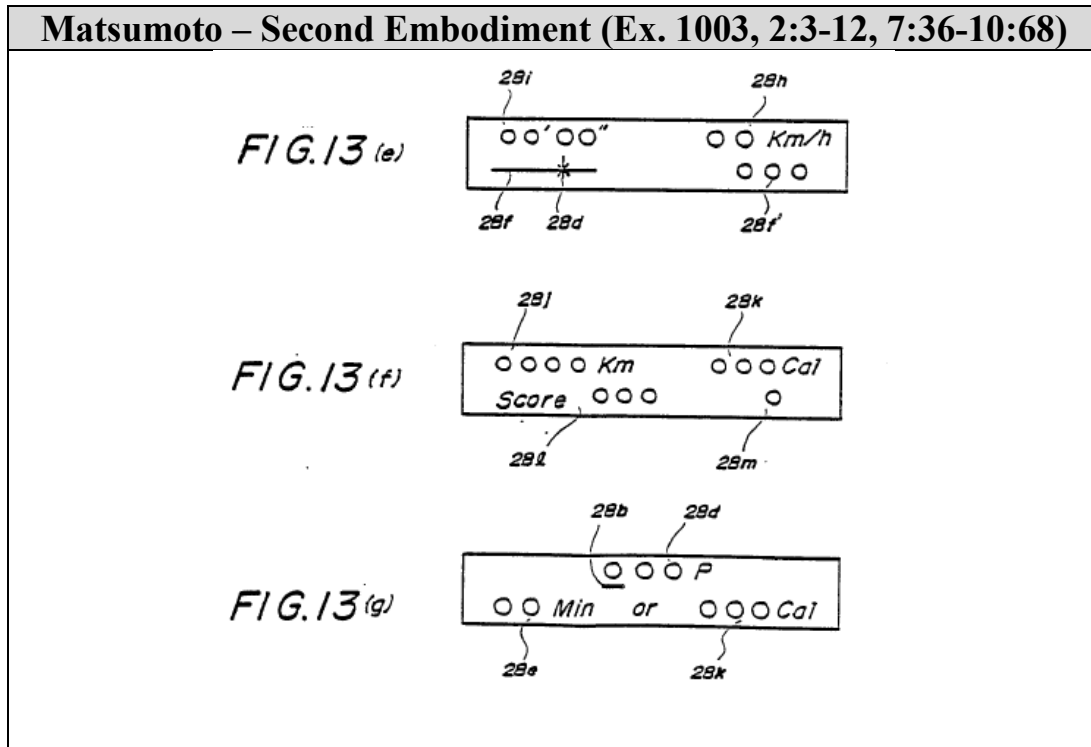


FIG. 11



Dr. Lynch’s opinions that the “concepts” of the embodiments are “connected,” and that the machines have “overlapping aspects” and some common “components,” do not support anticipation. Ex. 1018, ¶¶37-42. Dr. Lynch simply ignored the components and features that are *not* in common (e.g., different displays, circuitry, and exercise programs). E.g., Ex. 1003, 3:5-4-65, 7:36-10-68. When asked about Figures 3 and 10, Dr. Lynch initially dodged the question, testifying that “[t]hey are different *drawings*.” Ex. 2012, 179:15-24. Yet when pressed, Dr. Lynch admitted that Figures 3 and 10 show “different features.” Ex. 2013, 68:14-21. Dr. Lynch also admitted that the second embodiment’s “manual training mode,” which has a corresponding button in Figure 10, “is different” because it is “not discussed” in the first embodiment. *Id.*, 72:24-73:12.

Furthermore, Petitioner’s argument that a POSITA would “at once envisage” combining “aspects” (not embodiments) of Matsumoto relies on a complete misstatement of the law. Paper 26, 14. As an initial matter, Petitioner has waived any argument that Matsumoto’s embodiments may be combined, because Petitioner insists they are not distinct.¹⁰ But even if the Board considers combining distinct embodiments, no exception to *Net MoneyIN* applies.

First, in *Nidec* the Federal Circuit expressly cautioned that “*Kennametal* does not stand for the proposition that a reference missing a limitation can anticipate” if a POSITA would “at once envisage” it. *Nidec Motor Corp.*, 851 F.3d at 1274. Yet that’s what Petitioner argues, citing Dr. Lynch (“it was known and common to use heart rate zones”), without showing Matsumoto discloses the complete claim. Paper 26, 14.

In any case, *Kennametal* and *Unified Patents* are also inapposite, as they did not involve combining distinct embodiments. Paper 26, 14. In *Kennametal*, the issue was whether a patent anticipated a tool coated with a metal binder (ruthenium), using a specific coating process (PVD), where the patent disclosed five metal binders (including ruthenium), and three coating processes that could be used with any of them (including PVD). *Kennametal, Inc. v. Ingersoll Cutting Tool Co.*, 780 F.3d

¹⁰ See fn.2 above, discussing *Intel*.

1376, 1379-1383 (Fed. Cir. 2015). The Federal Circuit affirmed the patent disclosed the combination of ruthenium and PVD, because it “**teaches** 15 combinations, of which one anticipates.” *Id.*, at 1383. Similarly, in *Unified Patents* the Board found that an article (which did not reference distinct embodiments) disclosed the combination of an “LRU algorithm” and “read-ahead strategy,” because those elements were discussed “[i]n **one section**” teaching “that such algorithms generally are implemented with ‘read-ahead strategies.’” *Unified Patents, Inc. v. Intellectual Ventures I LLC*, IPR2016-01643, 2018 WL 1511821, at *12 (PTAB Mar. 26, 2018).

In contrast, Matsumoto discloses distinct embodiments (in separate sections, with separate figures), and does not disclose **any** “combination possibilities.” *Nidec Motor Corp.*, 851 F.3d at 1274. Petitioner cites nothing to demonstrate otherwise. Paper 26, 14-15. Dr. Lynch opines that “Matsumoto discloses a limited number of ways for prompting the user” (Ex. 1018, ¶42), which even if true, does not “**teach**[] that the disclosed components or functionalities **may be combined**.” *Blue Calypso*, 815 F.3d at 1342-44 (affirming a reference “explicitly contemplates” a combination where two system elements were depicted in the same figure).

At most, Petitioner’s arguments could only be relevant to **obviousness**. *E.g.*, Paper 26, 14; Ex. 1018, ¶42 (a “POSITA would understand the benefits to prompting the user with heart rate zones”). But the Board rejects such arguments for anticipation. *Stahls’ Inc. v. Schwendimann*, IPR2020-00641, 2021 WL 4877584,

*15-16 (PTAB Oct. 1, 2021) (for a reference describing two elements in separate embodiments, “[a]t best,” expert testimony “that a skilled artisan could have used the contact adhesive in a manner not disclosed” “may be relevant to an obviousness inquiry but not anticipation”); *see also GSI Technology, Inc. v. Cypress Semiconductor Corp.*, IPR2014-00121, 2015 WL 1643039, *8-9 (PTAB Apr. 9, 2015) (“[e]ven if a skilled artisan would have been able to modify the circuit of Figure 1” for “use of the circuit of Figure 3,” that “invoke[s] the question of obviousness, not anticipation”).

C. Matsumoto Does Not Disclose Limitations [E], [F], Or [G]

The Reply did not address limitation [E], where Petitioner also combined embodiments. Paper 22, 43-45. And Petitioner failed to rebut combining embodiments for limitation [G], merely asserting that it “did not combine,” citing no support. Paper 26, 15; *Net MoneyIN*, 545 F.3d at 1371.

For limitations [F]-[G], Petitioner also failed to rebut that it relied on the same “heart rate measurements” as for limitation [D]. Paper 22, 45-46. In Reply, Petitioner cites pp. 32 and 36 of the Petition (Paper 26, 15), which proves Nike’s point—on both pages, Petitioner cited the *same* measurements in column 5.

D. Matsumoto Does Not Anticipate Claims 5/7

Because Matsumoto does not anticipate Claim 1, it does not anticipate Claims 5/7.

IV. GROUND 3: LUBELL AND CECI

A. Petitioner Failed To Establish A Motivation To Combine Lubell and Ceci

Petitioner failed to prove a motivation to combine, and its new Reply argument fails because it relies on an entirely unsupported reading of Lubell. Paper 26, 16-20. Namely, Petitioner now argues that “Lubell’s predefined protocol is a maximal test,” such that Lubell’s statement that another “suitable submaximal exercise test protocol could be used” would have led a POSITA to combine Lubell’s device with a reference disclosing a type of protocol (submaximal) supposedly different than Lubell’s (maximal, according to Petitioner). *Id.* There’s just one problem—*Lubell does not refer to its protocol as “maximal” a single time*, as Dr. Lynch admits. Ex. 2013, 82:24-83:1 (“Sitting here now, I’m not aware of a place in the patent where it refers to its own protocol as maximal.”). Instead, Lubell exclusively describes its protocol as “submaximal.” Ex. 1004, Abstract (“a submaximal exercise stress test protocol”), 3:34, 3:58-59, 4:64-65, 6:34-37, 8:29-37, 9:13-18, 9:43-45, 12:9-13 (same).

Further, Dr. Lynch confirmed that his opinion is not that Lubell incorrectly describes its own protocol. Ex. 2013, 80:25-81:1 (“I wouldn’t go as far as to opine that Lubell gets it wrong.”). The import is clear—Lubell describes its protocol as submaximal, and its statement that “a suitable submaximal exercise test protocol

could be used” with other types of exercise refers to *the same type of protocol*. Accordingly, there is zero support for combining Lubell with Ceci.

Leaving no doubt, Dr. Lynch again confirmed that the only fitness parameter Lubell teaches how to calculate is VO_{2max} . Ex. 2013, 88:14-17. This conclusively shows a POSITA would have had no reason to look to Ceci, which Dr. Lynch admits does not disclose a protocol for determining VO_{2max} . Ex. 2012, 272:15-17. Petitioner’s argument that *Nike* attempted “to redefine Lubell’s express purpose” is backwards (Paper 26, 18), as it is *Petitioner* who pretends that Lubell is not a VO_{2max} reference. Paper 26, 19 (“Lubell’s purpose is not to determine VO_{2max} .”).

1. Lubell Teaches Away From Ceci

Petitioner did not address Lubell’s express disparagement of fitness monitors where subjects can pace themselves (Ex. 1004, 2:1-51), and simply ignores that Lubell teaches away from protocols like Ceci’s. Paper 26, 18-19; Ex. 1018, ¶52.

2. No Reasonable Expectation Of Success

Petitioner’s Reply is untethered from the ground advanced in the Petition. Petitioner now argues this “combination does not rely on Lubell’s Van der Walt protocol.” Paper 26, 20. This makes no sense, because the Lubell device is designed and programmed to determine VO_{2max} using the Van der Walt-based protocol. *E.g.*, Ex. 1004, 4:4-26. To explain why a POSITA would have supposedly looked to Ceci (even though it has nothing to do with VO_{2max}), Petitioner argues that Ceci discloses

a “protocol” for “determining” the supposed “fitness parameter” of “heart rates.” Paper 26, 19. But Lubell’s device already measures heart rates. *E.g.*, Ex. 1004, 2:67-3:1 (“a heart rate monitor device is provided for monitoring the heart rate of an animate subject during exercise training”). A POSITA would have had no reason to combine with Ceci for determining “heart rates,” because Lubell already does that.

Nothing in Reply demonstrates that the Lubell device could be combined with Ceci. Petitioner’s new argument is that “Ceci teaches a relationship between VO_{2max} and heart rate, and Lubell provides a specific equation for the relationship.” Paper 26, 19. This is wrong. Ceci referenced another study finding that exercising in the “RPE range between 11 and 15 *would correspond to* a range of about 60-80% of VO_{2max} .” Ex. 1005, 733. This is not a formula or protocol for determining VO_{2max} . And the “specific equation” in Lubell is not for determining VO_{2max} either. Instead, *after* VO_{2max} has been determined, Lubell can calculate the percentage (%) of VO_{2max} at which the user is exercising, using data “previously calculated and stored,” including “maximal heart rate.” Ex. 1004, 4:39-52. This equation outputs “a percentage value up to one hundred percent” (*id.*, 10:20-21), not VO_{2max} (“milliliters of oxygen per kilogram of body weight per minute”). *Id.*, 4:26-28. And even if this equation could determine VO_{2max} , the combination still would not work because it requires maximal heart rate, which Ceci did not measure. Ex. 1009, ¶68.

Dr. Lynch provides no support, as his conclusory opinion that “[a] POSITA would know that there are known methods for taking heart rates and/or exercise intensity and determining VO_{2max} ,” cites his own deposition transcript, disconnected from any teachings in the references. Ex. 1018, ¶53.

B. Lubell + Ceci Does Not Disclose Limitation [D]

Petitioner admittedly relies on the combination “to determine % VO_{2max} zones,” not heart rate zones. Paper 26, 21; Ex. 1018, ¶54. While Lubell explains that a “heart rate *corresponding to*” a given “percent of maximal oxygen uptake” can be estimated using an equation (Ex., 1004, 10:8-24), this equation calculates an estimated heart rate, and does not measure the heart rates while exercising, as required. Accordingly, even Lubell’s single “60 to 80 percent of VO_{2max} ” zone is not “based on first heart rate measurements.” Dr. Lynch suggests that because there is a relationship “between % VO_{2max} and exercise heart rate,” one could design a system using heart rate zones. Ex. 1018, ¶54. But he identifies no teaching or motivation for doing so in Lubell, or in Ceci, which also references a “range of about 60-80% of VO_{2max} ,” not heart rate zones. *Id.*

V. GROUNDS 6-7: AMANO + GORMAN/FLACH

Petitioner’s arguments regarding “wired communication” devices are a red herring. Reply, 21-23. While Petitioner did not rebut that the challenged dependent

claims relate to wireless,¹¹ even if it had the issue is that Petitioner failed to demonstrate a motivation to combine Amano's wired devices with the teachings in Gorman/Flach.

Dr. Lynch admitted that for its wired devices, Amano does not disclose having the problems of distinguishing signals sent by multiple sensors on the same signal path, or of addressing noise issues. Ex. 2013, 95:15-22, 99:17-22. Yet those are the problems that Dr. Lynch claims Gorman and Flach are directed to solving. *E.g.*, Ex. 1018, ¶¶31-33. Dr. Lynch also admitted that the solutions taught by Gorman and Flach (*i.e.* encoding, identification information, and time channels) would not have been necessary for Amano's wired devices to function. Ex. 2013, 107:14-24. Accordingly, there is no motivation for combining these combinations.

Nor did Petitioner demonstrate a reasonable expectation of success. Everything the Petition cites from Gorman and Flach refers to *wireless* communications. Paper 1, 15-17, 47-54. In Reply, Petitioner asserts that these teachings are "applicable to either wireless or wired communication" (Paper 26, 22-23), but cites no support from Gorman or Flach. Neither does Dr. Lynch. Ex. 1018, ¶¶31-34. First, Dr. Lynch does not show Gorman teaches using encoding or

¹¹ Petitioner did not address Dr. Bergeron's discussion of the dependent claims. *Compare* Paper 26, 21-22 *with* Ex. 2008, ¶¶13-16. Instead, Petitioner only cites the specification's sole reference to an "alternate[]" embodiment using a "wire or an optical fiber," which is not mentioned again. *Id.*

“identification data” in wired devices. *Id.* Dr. Lynch opines that a “wired CAN bus” could use “identification data” (Ex. 1018, ¶31), but neither Gorman nor Amano mentions a “CAN bus.” Second, Dr. Lynch does not show that Flach teaches using a “TDMA method” in wired devices. Ex. 1018, ¶¶31-32. And for good reason, because Flach describes a “wireless TDMA protocol.” *E.g.*, Ex. 1008, Abstract, [0003]. Dr. Lynch confused the wireless TDMA (time division multiple access) protocol, with TDM (time division multiplexing). *Id.*, [0139].¹² Dr. Lynch admitted he did not know details for how TDM and TDMA differ. Ex. 2013, 89:21-90:13.

Further, contradicting his declaration, Dr. Lynch admitted Amano “doesn’t say explicitly” that its wired devices use “multiple sensors” communicating on the “same” signal path. Ex. 2013, 97:21-98:2; Ex. 1018, ¶31. Dr. Lynch also admitted that the Amano figures depict “could be three, it could be two wires” connecting the devices to sensors. Ex. 2013, 99:10-16.

Finally, Petitioner’s quotations of Dr. Bergeron’s testimony are not relevant (Paper 26, 22), as Petitioner asked about a generic “wired communication system,” not Amano, and Dr. Bergeron answered that for “say, [a] computer, you’d probably have maybe a checksum or some way to encode the original data so that you could make sure it reached the destination intact.” Ex. 1017, 92:23-93:19.

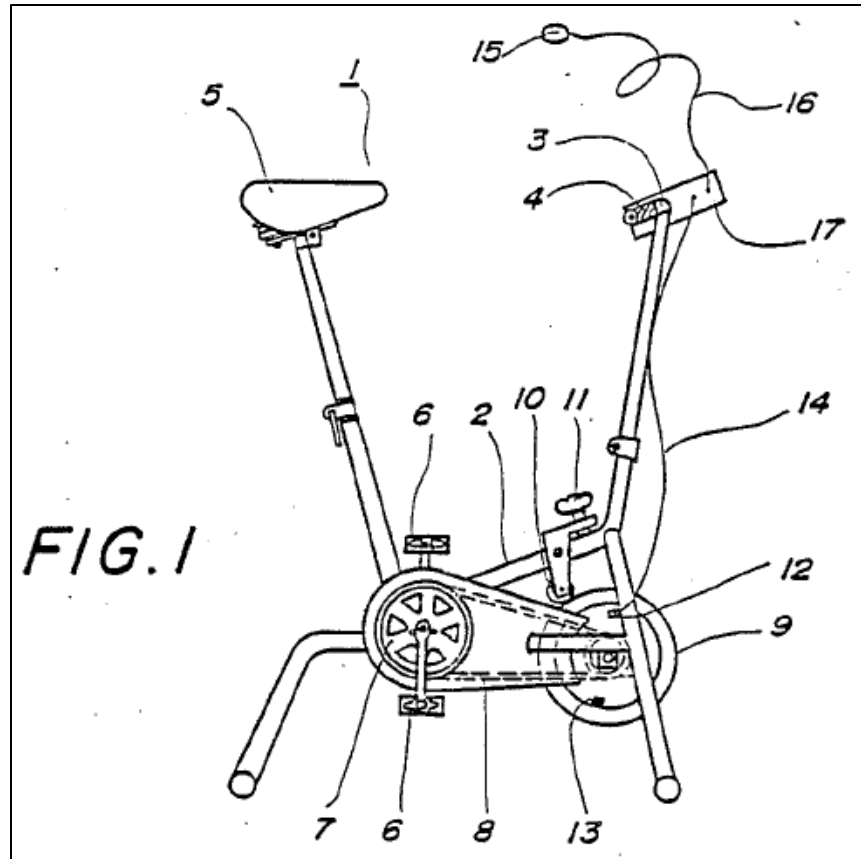
¹² To be clear, nowhere does Petitioner cite or rely upon a TDM protocol.

**VI. GROUNDS 4-5: LUBELL-CECI + GORMAN/FLACH,
GROUNDS 8-9: MATSUMOTO + GORMAN/FLACH**

Petitioner failed to demonstrate these grounds for the same reasons as the Amano combinations.

Dr. Lynch admitted that Lubell and Matsumoto do not disclose having the problems of distinguishing signals sent by multiple sensors on the same wired signal path, or of addressing noise. Ex. 2013, 100:11-101:9 (Matsumoto), 108:4-109:12 (Lubell). Dr. Lynch also admitted that none of the solutions taught by Gorman and Flach (*i.e.* encoding, identification information, and time channels) would have been necessary for Lubell’s or Matsumoto’s wired devices to function (including because in Dr. Lynch’s opinion, “everything uses encoding” already). Ex. 2013, 104:8-13 and 105:22-106-14 (Matsumoto), 111:12-112:6 (Lubell). Accordingly, there is no motivation to combine.

Further, Petitioner acknowledges that Lubell’s device is wired and “has multiple sensors (heart rate sensor 12 and bicycle sensor 65)” (*id.*), but each sensor has its own “jack” (*i.e.*, wire) and thus the sensors do not communicate over one channel. Ex. 1002, 5:48-53. Dr. Lynch admitted Lubell discloses separate wires for its sensors. Ex. 2013, 111:4-10. Dr. Lynch also admitted (*id.*, 103:1-10) that Matsumoto’s devices utilize separate wires (14 and 16) to connect a pulse sensor and rotation sensors to the machines (*e.g.*, Ex. 1003, Fig. 1, 2:18-25):



Finally, Dr. Bergeron did not testify “that wired devices, like Lubell . . . use encoding or TDMA.” Paper 26, 25 (citing Ex. 1017, 24:1-5, 92:22-93:19). Dr. Bergeron testified that a “wired communication system” could “have maybe a checksum or some way to encode the original data.” *Id.* Petitioner did not ask about Lubell. And Dr. Bergeron only testified that TDMA “was known as of 2003” (*id.*), not that “wired devices” use TDMA, as Petitioner falsely claims.

VII. PETITIONER’S CRITIQUE OF DR. BERGERON IS BASELESS

Petitioner’s critique of Dr. Bergeron’s education must be rejected. *Petitioner* proposed the level of ordinary skill, and well knows that it includes “or the equivalent experience or education.” Paper 1, 18. Yet Petitioner dishonestly omitted

that aspect in representing that Dr. Bergeron does not qualify as a POSITA because “he has a bachelor’s degree in psychology.” Paper 26, 26. In addition to an M.D., Dr. Bergeron has two years of undergraduate education in electrical engineering, minors in chemistry and physics, two years of post-graduate education in computer science, and two years of post-graduate education in medical informatics. Ex. 2001, Ex. A and ¶¶4-20. He also has four decades of experience researching, designing, and engineering physiological and other electronic devices. *Id.* Dr. Bergeron has significantly more education and experience than the POSITA minimum.

VIII. CONCLUSION

For the reasons above and in Nike’s Response, Nike requests the Board enter a FWD affirming the patentability of Challenged Claims 1–5, 7, 9, 12–14, 17–19.

Dated: February 29, 2024

Respectfully Submitted,

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CERTIFICATE OF COMPLIANCE

The undersigned certifies that this response complies with the type-volume limitations of 37 C.F.R. § 42.24(a)(1)(i). This sur-reply (including figure labels and annotations) contains 5,593 words as calculated by the “Word Count” feature of Microsoft Office 365 Word application, the word processing program used to create it, and manual counting of the annotations in the figures.

The undersigned further certifies that this response complies with the typeface requirements of 37 C.F.R. § 42.6(a)(2)(ii) and typestyle requirements of 37 C.F.R. § 42.6(a)(2)(iii). This response has been prepared in a proportionally spaced typeface using Microsoft Office 365 Word application in Times New Roman 14-point font.

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§42.6(e)(4)(i) *et seq.* and 42.105(b), the undersigned
Certifies that on February 29, 2024, a true and entire copy of this **NIKE, INC'S**
PATENT OWNER SUR-REPLY IN IPR2023-00438, was served via e-mail to
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