NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

APPLE INC.,
Appellant

v.

MASIMO CORPORATION,
Appellee

2022-1890

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2020-01523.

Decided: January 12, 2024

THOMAS GREGORY SPRANKLING, Wilmer Cutler Pickering Hale and Dorr LLP, Palo Alto, CA, argued for appellant. Also represented by MICHAEL JOHN BALLANCO, LAUREN ANN DEGNAN, CHRISTOPHER DRYER, WALTER KARL RENNER, Fish & Richardson P.C., Washington, DC.

STEPHEN C. JENSEN, Knobbe, Martens, Olson & Bear, LLP, Irvine, CA, argued for appellee. Also represented by JAROM D. KESLER, JOSEPH R. RE, JOSHUA STOWELL.

Before LOURIE, PROST, and REYNA, *Circuit Judges*.

REYNA, *Circuit Judge*.

Apple Inc. appeals a final written decision of the United States Patent and Trademark Office Patent Trial and Appeal Board, which determined that claims 1–7, 9–18, and 20–24 of U.S. Patent No. 8,457,703 were not unpatentable as obvious. We affirm.

BACKGROUND

A. U.S. Patent No. 8,457,703

Masimo Corporation ("Masimo") is the assignee of U.S. Patent No. 8,457,703 ("'703 patent"), which relates to reducing power consumption of a pulse oximeter. '703 patent, Abstract. The patent discloses regulating power consumption by intermittently changing the number of samples received and processed by the oximeter. *Id.* at 6:9–11. Based on physiological measurements and signal statistics, the oximeter determines whether to increase or decrease sampling. *Id.* at 6:25–39. In one embodiment, the patent discloses controlling sampling by intermittently changing the duty cycle of the current supplied to drive the LEDs that project light onto the patient's tissue. *Id.* at 5:55–66, 6:56–7:8.

Claim 1 is representative and recites,

> 1. A method of managing power consumption during continuous patient monitoring by adjusting behavior of a patient monitor, the method comprising:
>
> driving one or more light sources configured to emit light into tissue of a monitored patient;
>
> receiving one or more signals from one or more detectors configured to detect said light after attenuation by said tissue;

> continuously operating a patient monitor at a lower power consumption level to determine measurement values for one or more physiological parameters of a patient;
>
> comparing *processing characteristics* to a predetermined threshold; and
>
> when said processing characteristics pass said threshold, transitioning to continuously operating said patient monitor at a higher power consumption level,
>
> wherein said continuously operating at said lower power consumption level comprises reducing activation of an attached sensor,
>
> said sensor positioning said light sources and said detectors proximate said tissue.

Id. at 11:32–51 (emphasis added).

B. Prior Art References

Two references are relevant to this appeal: Diab (U.S. Patent No. 5,632,272) and Amano (U.S. Patent No. 6,293,915).

Diab discloses a pulse oximeter that includes a sensor, a digital signal processing system, and a display. Diab, 34:11–26, Fig. 11. The digital signal processing system provides several outputs to be displayed, including "blood oxygen saturation, heart rate, and a clean plethysmographic waveform." *Id.* at 34:26–28. Within the digital signal processing system, as shown in Figure 20, heart rate module 410 includes motion artifact suppression module 580. *Id.* at 47:30–38, Fig. 20 (below).

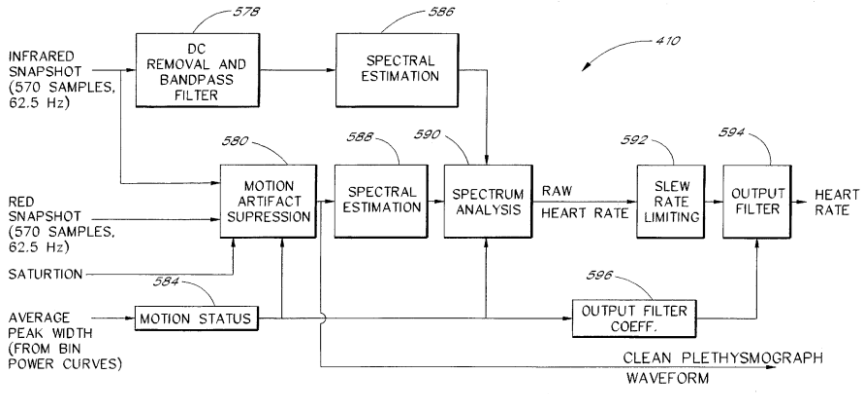
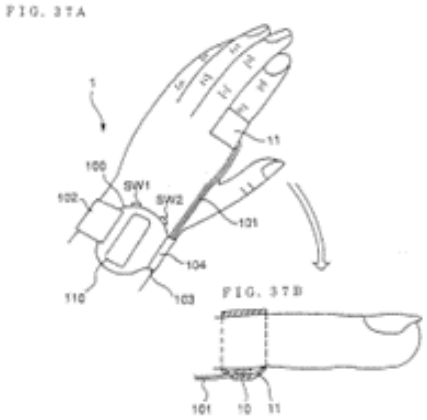


FIG. 20

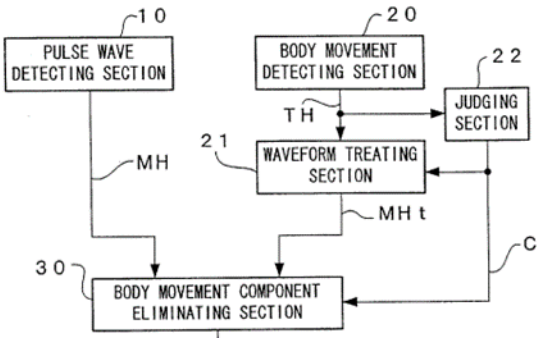
In case of motion, motion artifact suppression module 580 suppresses motion artifacts, namely, artifacts introduced by patient movement that may distort the measured signal. *Id.* at 3:6–9, 47:55–56. "If motion is not detected, spectral estimation on the signals is carried out directly without motion artifact suppression." *Id.* at 47:52–54.

Amano discloses a wristwatch type of pulse wave detector mounted on a finger. *See* Amano, Figs. 37A and 37B (below).



In the embodiment illustrated in Figure 1, pulse wave detecting section 10 detects a pulse waveform and outputs the detected signal to body movement component eliminating section 30. *Id.* at 21:5–8, Fig. 1 (excerpt below).

FIG. 1



The device also includes body movement detecting section 20 and waveform treating section 21. *Id.* at 21:9–12. If no body movement is present, the operations of waveform treating section 21 and body movement component eliminating section 30 are suspended. *Id.* at 21:65–22:2. According to Amano, this suspension reduces the power consumption of the device. *Id.* at 22:4–6.

C. Procedural History

After Masimo sued Apple Inc. ("Apple") for infringing the '703 patent, Apple petitioned for *inter partes* review ("IPR") of claims 1–7, 9–18, and 20–24 of the '703 patent.

The Patent Trial and Appeal Board ("Board") construed the claimed "processing characteristics" as "determined from a signal received from one or more detectors configured to detect light." J.A. 14. Based on this construction, the Board assessed Apple's eight obviousness grounds, each of which addressed either or both of Diab and Amano. Ultimately, the Board concluded that Apple failed to show obviousness of the challenged claims.

Apple appealed. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A).

STANDARD OF REVIEW

Claim construction is a question of law with underlying questions of fact. *Wasica Fin. GmbH v. Cont'l Auto. Sys., Inc.*, 853 F.3d 1272, 1278 (Fed. Cir. 2017). We review de novo the Board's ultimate claim construction and its supporting determinations that are based on intrinsic evidence. *Personalized Media Commc'ns, LLC v. Apple Inc.*, 952 F.3d 1336, 1339 (Fed. Cir. 2020). Subsidiary factual findings involving extrinsic evidence are reviewed for substantial evidence. *Id.*

We review the Board's ultimate obviousness determinations on a de novo basis and any underlying factual determinations for substantial evidence. *In re Gartside*, 203 F.3d 1305, 1316 (Fed. Cir. 2000). The scope and content of the prior art and whether a person of ordinary skill in the art would have been motivated to combine teachings in the prior art are both questions of fact. *Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1378 (Fed. Cir. 2023). Substantial evidence means "such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." *Id.* (citation omitted).

DISCUSSION

Apple challenges the Board's construction of "processing characteristics" as too limiting. Apple also raises two arguments relating to the prior art references. First, Apple contends that the Board failed to address its alternative argument as to Diab's teachings. Second, Apple argues that the Board applied an inherency standard to Apple's obviousness argument based on the combination of Diab and Amano.

A. "Processing Characteristics"

The Board concluded that "in the context of the '703 patent, 'processing characteristics' are determined from a signal received from one or more detectors configured to detect light." J.A. 14. The Board rejected Apple's expansive construction interpreting this term to encompass any information that is processed. *Id.* To the Board, such a "sweeping premise" is inconsistent with the '703 patent. *Id.* We agree with the Board.

Both the claim language and the specification support the Board's claim construction. In the claim language, "processing characteristics" refers to the processing of "one or more signals from one or more detectors configured to detect" light attenuated by the tissue. *See* '703 patent, 11:32–51. These signals represent the only signals received and processed in the claimed patient-monitoring invention. Throughout the specification, "processing characteristics" are described as being determined based on the signals received from the light detectors, the sole source of signals that are then processed. *See, e.g.*, *id.* at 5:11–23, 5:40–48, Figs. 3 & 4. Although the specification does not state the term in explicit definitional format, the Board's reading of the term is consistent with how the invention is described in the specification.

Contrary to Apple's contention, the additional limitations to "processing characteristics" recited in dependent claims 4 and 8 do not support Apple's proposed expansive construction. The additional limitations[1] further define

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[1] Dependent claim 4 recites that the "processing characteristics comprise signal characteristics from one or more light sensitive detectors." '703 patent, 11:59–61. Dependent 8 claim recites that the "processing characteristics include determining an estimate of current power

and restrict "processing characteristics" to a subset of the resulting downstream data generated from processing the received signals. They do not support reading "processing characteristics" to encompass information untethered to the underlying processing of the invention as described in the patent. Apple's proposed construction improperly takes the term out of context of the patented invention and lacks support. For these reasons, we hold that the Board correctly construed the term "processing characteristics" as "determined from a signal received from one or more detectors configured to detect light." *See* J.A. 14.

B. Apple's Partial-Suspension Argument

Apple asserts that the Board failed to grasp its alternative argument that Diab teaches suspending a subset of the operations of its motion artifact suppression module. Appellant Br. 41–45. In Apple's view, this partial suspension, like its argument based on the suspension of the entire module, would read on the claimed limitation of reducing power consumption. *Id.* at 41–42.

We note that Apple failed to raise the purported partial-suspension argument before the Board. The record demonstrates that Apple raised a singular argument that Diab teaches suspending its motion artifact suppression *module* if there is no motion. Apple did not identify a distinct alternative argument relying on suspending *a subset of components* within that module. In its petition, Apple contended that Diab "teaches not executing the motion artifact suppression module 580" and that it would have been obvious to "suspend and not execute" operations of that module if there is no motion. J.A. 85. Apple's argument focused on suspending operations of the motion artifact suppression module altogether. The petition made no

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consumption and comparing said estimate with a target power consumption." *Id.* at 12:1–4.

mention of suspending a s*ubset* of the operations performed by the motion artifact suspension module.

To show that it made the partial-suspension argument before the Board, Apple cites several pages from its petitioner's reply and certain statements made at the oral hearing. Appellant Br. 44. To the extent Apple raised a new argument in its reply or at the oral hearing, such argument is untimely and improper.[2] *See Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016).

We hold that Apple failed to properly present to the Board the partial-suspension argument it now raises on appeal. *See Netflix, Inc. v. DivX, LLC*, 84 F.4th 1371, 1377–78 (Fed. Cir. 2023). Absent exceptional circumstances, arguments not properly presented before the Board are generally not considered on appeal. *In re Google Tech. Holdings LLC*, 980 F.3d 858, 863 (Fed. Cir. 2020). We find no exceptional circumstances here justifying exercising our discretion to hear Apple's forfeited argument. *See id.*

C. Motivation to Combine

Apple also contends that the Board improperly applied an inherency standard when evaluating Apple's motivation-to-combine theory. Apple argues that the Board required it to show that suspending Diab's motion artifact suppression module based on Amano would "necessarily" or "inherently" reduce power consumption. Appellant

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[2] A review of Apple's citations to its reply shows that it continued to argue suspending "all the operations of the motion artifact suppression module 580" and that "a POSITA would have found it obvious not to execute operations of [that module]." J.A. 1689–90. The reply did not raise an alternative argument based on suspending a *subset* of the operations. Apple's reliance on counsel statements at the oral hearing fails for similar reasons.

Br. 56–57. We disagree. Rather than applying an "inherency" standard, the Board addressed Apple's reasoning for combining Diab and Amano and explained why it found Apple's arguments unpersuasive.

During the IPR, the Board addressed and found unpersuasive Apple's proposed reasoning to combine Diab with Amano. J.A. 28–32. The Board explained that although both relate to physiological monitoring, the two references "disclose different processing algorithms that result in different outputs that are not directly applicable to each other." J.A. 29. Given these differences, the Board found Apple failed to adequately explain why one skilled in the art would have applied Amano's teaching of suspending certain processing to Diab's motion artifact suppression module. J.A. 30.

The Board further addressed Apple's contention that applying Amano's teaching to Diab's motion artifact suppression module "would" reduce power consumption in Diab. *Id.* This "supposed power reduction is the foundational reason" Apple advanced for combining the two references. J.A. 31–32. But the Board found that Masimo persuasively showed that Amano's "power reduction may not occur in Diab's differently structured and configured system." J.A. 31. To the Board, even assuming one were to apply Amano's teachings to suspend Diab's motion artifact suppression module, it may not reduce power consumption in Diab's system. *Id.* The Board also considered the parties' expert testimony and found Masimo's expert testimony more credible. *Id.* The Board therefore rejected Apple's proffered premise for finding a motivation to combine. We conclude that the Board's finding of a lack of motivation to combine Diab and Amano is supported by substantial evidence.

CONCLUSION

We have considered Apple's remaining arguments and find them unpersuasive. Accordingly, the decision of the Board is *affirmed*.

AFFIRMED

COSTS

Costs against Appellant.