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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte NIKOLAJ HVIID

Appeal 2018-006870
Application 15/113,437
Technology Center 2600

Before ERIC B. CHEN, JAMES B. ARPIN, and
DAVID J. CUTITTA II, *Administrative Patent Judges*.

CUTITTA, *Administrative Patent Judge*.

DECISION ON APPEAL
STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1–5 and 7–11, all of the pending claims.² We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM IN PART.

¹ We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party-in-interest as BRAGI GmbH. Appeal Br. 4.

² Claim 6 is cancelled. Appeal Br. 50.

CLAIMED SUBJECT MATTER

Appellant’s invention relates to “an ear phone system for sports activities, which is capable of providing performance relevant information in a simple and intuitive easily graspable manner.” Spec. 2:1–3.³

Claims 1 and 11 are independent. Claims 1–4, reproduced below with limitations at issue italicized, are exemplary of the claimed subject matter:

1. A multifunctional earphone system for sports activities, the system comprising:

a first apparatus configured to be carried in one of a user’s ears, the first apparatus comprising a first data communication unit and a first loudspeaker; and

a second apparatus configured to be carried in the user’s other ear, the second apparatus comprising a second data communication unit and a second loudspeaker;

wherein at least one of the first apparatus and the second apparatus comprises a sensor unit and a data processing unit, wherein the data processing unit is configured to generate performance data based on measurement data acquired by the sensor unit;

wherein the first apparatus further comprises a signal processing unit configured to generate a binaural audio signal based on the performance data, the binaural audio signal comprising a first signal part to be output by the first loudspeaker and a second signal part to be output by the second loudspeaker, wherein the binaural signal evokes a spatial hearing impression with directional localization;

³ Throughout this Decision we refer to: (1) Appellant’s Specification filed July 21, 2016 (“Spec.”); (2) the Final Office Action mailed July 12, 2017 (“Final Act.”); (3) the Appeal Brief filed December 29, 2017 (“Appeal Br.”); (4) the Examiner’s Answer mailed April 25, 2018 (“Ans.”); and (5) the Reply Brief filed June 20, 2018 (“Reply Br.”).

wherein the first data communication unit is configured to communicate the second signal part of the binaural audio signal to the second data communication unit;

and

wherein the signal processing unit is configured to modify pre-stored audio data in dependency on at least one value of the performance data.

2. The system according to claim 1, wherein *the binaural audio signal generated by the signal processing unit comprises a signal component that is indicative of a value of the performance data.*

3. The system according to claim 2, *wherein the signal processing unit is further configured to generate the binaural audio signal such that a spatial position of the signal component is dependent on the value of the performance data.*

4. The system according to claim 3, *wherein the spatial position of the signal component relative to a plane is dependent on a difference between the value of the performance data and a predetermined reference value.*

Appeal Br. 49–50 (Appendix-Claims).

REJECTIONS

The Examiner rejects claims 1, 2, and 7–11 under 35 U.S.C. § 103 as unpatentable over the combined teachings of NEWHAM (US 2013/0316642 A1; published Nov. 28, 2013) (“Newham”) and Vavrus et al. (US 2014/0348367 A1; published Nov. 27, 2014) (“Vavrus”). Final Act. 2–8.

The Examiner rejects claims 3–5 under 35 U.S.C. § 103 as unpatentable over the combined teachings of Newham, Vavrus, and Ruwe et al. (US 2014/0079257 A1; published Mar. 20, 2014) (“Ruwe”). *Id.* at 8–10.

OPINION

We review the appealed rejections for error based upon the issues identified by Appellant and in light of Appellant's arguments and evidence. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential). Arguments not made are waived. *See* 37 C.F.R. § 41.37(c)(1)(iv).

Obviousness Rejection of Claim 1

The Examiner rejects claim 1 under 35 U.S.C. § 103 as unpatentable over the combined teachings of Newham and Vavrus. Final Act. 2–6. We adopt the Examiner's findings and conclusions as our own and add the following primarily for emphasis.

Appellant argues neither “Newham nor Vavrus nor the combination thereof teach the claimed binaural signal based on performance data. Indeed, Newham does not use the term binaural at all. Newham at best indicates that ‘stereo-quality audio may be streamed from a first Bluetooth® device (e.g., phone) to another Bluetooth® device (e.g., headphones).” Appeal Br. 15. Appellant further argues “Vavrus also fails to use the term binaural.” *Id.* at 17.

The Examiner responds,

Contrary to Appellant's assertion, Merriam-Webster defines the term “binaural” as “of, relating to, or involving two or both ears” therefore binaural signals are merely signals generated by two earpieces into both of a user's ears. Based on this interpretation of “binaural signals”, Newham teaches binaural signals by teaching signals generated by both earpieces to both ears of a user (para. [0041] – [0042]) and Vavrus teaches outputting performance values to an earpiece (para. [0042]) thus the combination of Newham and Vavrus teach binaural signals indicative of performance data.

Ans. 3 (citing Newham).

Appellant’s argument is unpersuasive because Appellant fails to establish the Examiner’s interpretation of “binaural audio,” as recited in claim 1, is not the broadest reasonable interpretation consistent with Appellant’s Specification. *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). The Specification does not define expressly “binaural audio.” But, the Specification does describe that a “binaural audio signal consists of a first (right) signal part . . . and a second (left) signal part.” Spec. 24:31– 25:30. This description is consistent with the Examiner’s Merriam-Webster definition of binaural as “relating to, or involving two or both ears.” Ans. 3. Appellant, moreover, fails to set forth a description of the term in the Specification that is inconsistent with the Examiner’s interpretation. *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997). Appellant, therefore, fails to demonstrate persuasively that the Examiner’s broad interpretation of a binaural audio signal as encompassing Newham’s “stereo-quality audio” (Newham ¶ 37, Fig. 1) is inconsistent with Appellant’s Specification or is otherwise unreasonable. *In re Smith Int’l, Inc.*, 871 F.3d 1375, 1382–83 (Fed. Cir. 2017).

As Appellant notes, Newham teaches that “the wrist display transmits the audio to *each of* the ear pieces.” Appeal Br. 16 (citing Newham ¶¶ 41–43) (emphasis added). Furthermore, although we do not rely on the finding here, we note that Vavrus, in discussing that “stereo [signals] could be transmitted,” also teaches a binaural audio signal. Vavrus ¶ 115. We, therefore, find unpersuasive Appellant’s argument that neither “Newham nor Vavrus nor the combination thereof teach the claimed binaural signal.” Appeal Br. 15.

Next, Appellant argues that “Newham and Vavrus do not teach a signal processing unit configured to modify pre-stored data [based on] performance data.” Appeal Br. 18 (emphasis omitted).

This argument is unpersuasive. The Examiner relies on Vavrus’ processor 36, which is “configured to generate performance data . . . from the real time performance sensors 42) based on measurement data acquired by the sensor unit.” Final Act. 4 (citing Vavrus ¶ 61, Fig. 4) (emphasis omitted). Of particular relevance, the Examiner finds,

Vavrus teaches outputting performance values via speakers within an earpiece based on sensor readings. Further, in the response to arguments section in the Final Office Action, the examiner contended that the sensor readings would have to be recorded in memory prior to being outputted to the earpiece. After the earpiece has outputted the performance value, the stored sensor reading would then be updated with a new sensor reading and the same process is repeated therefore Vavrus does teach a signal processing unit configured to modify pre-stored data in dependency on at least one value of the performance data.

Ans. 4.

In response, Appellant argues “Vavrus does not teach the second sensor reading would then be updated with a new sensor reading, therefore there is no modification of pre-stored data.” Reply Br. 22.

Appellant’s arguments are not persuasive because Appellant fails to demonstrate error in the Examiner’s finding that Vavrus’ signal processing unit 36 would necessarily modify pre-stored audio data by continuously processing real-time performance data received from real time performance sensors 42. Final Act. 4; Ans. 4. Even though Vavrus does not expressly indicate that stored audio corresponding to real-time sensor reading would then be updated with a new sensor reading in memory 38 and the process

repeated (Ans. 4), “obviousness is not determined by what the references expressly state but by what they would reasonably suggest to one of ordinary skill in the art.” *In re DeLisle*, 406 F.2d 1386, 1389 (CCPA 1969). That is, Appellant argues, “Vavrus does not teach the second sensor reading would then be updated with a new sensor reading, therefore there is no modification of pre-stored data.” Reply 22. Nevertheless, Appellant fails to argue persuasively or present persuasive evidence that the Examiner’s finding would not have been obvious in view of Vavrus’ teaching of processor 36 continuously processing digital data received from real time performance sensors 42 into audio by continuously modifying pre-stored audio data in memory 38. Final Act. 4; Ans. 4. Appellant fails to explain why one skilled in the art would not have considered such storing integral and necessary to Vavrus’ translation of sensor data into audio data transmitted to “the athlete’s headset 14.” Vavrus ¶ 61.

We, therefore, sustain the Examiner’s obviousness rejection of independent claim 1. We also sustain the Examiner’s obviousness rejection of independent claim 11, for which Appellant provides similar arguments. Appeal Br. 28–39; Reply Br. 29–40. We sustain for similar reasons the rejection of claims 7–10, which depend from claim 1, and were either not separately argued, or were nominally separately argued.

Obviousness Rejection of Claim 2

The Examiner finds the combination of Newham and Vavrus teaches or suggests “wherein the binaural audio signal generated by the signal processing unit comprises a signal component that is indicative of a value of the performance data,” as recited in claim 2. Final Act. 6; Ans. 3–4.

Appellant argues because “neither reference teaches a binaural signal, neither reference can teach a signal component of a binaural signal that is indicative of a value of the performance data,” neither Newham nor Vavrus teaches this limitation. Appeal Br. 23–28; Reply Br. 24–28.

As discussed above with respect to claim 1, we find unpersuasive Appellant’s argument that neither reference teaches a binaural signal. Because Appellant’s traversal of the Examiner’s rejection of claim 2 is predicated upon this unpersuasive argument, we find Appellant’s argument for claim 2 unpersuasive for the same reasons discussed above for claim 1.

We, therefore, sustain the Examiner’s obviousness rejection of dependent claims 2.

Obviousness Rejection of Claims 3 and 5

Appellant argues claims 3, 4, and 5 as a group and so we select claim 3 as exemplary of claims 3 and 5. Appeal Br. 39–44; Reply Br. 41–48; *see* 37 C.F.R. § 41.37(c)(1)(iv). Claim 4 is discussed separately below. The Examiner finds the combination of Newham, Vavrus, and Ruwe teaches or suggests “wherein the signal processing unit is further configured to generate the binaural audio signal such that a spatial position of the signal component is dependent on the value of the performance data,” as recited in claim 3. Final Act. 8–9; Ans. 4.

Appellant argues “the Examiner failed to mention the limitation of a binaural signal and Newham, Vavrus, and Ruwe do not disclose such a signal, therefore the rejection should be reversed.” Appeal Br. 39 (emphasis omitted).

As discussed above with respect to claim 1, we find unpersuasive Appellant’s argument that neither Newham nor Vavrus teaches a binaural

signal. Therefore, because Appellant's traversal of the Examiner's rejection of claim 3 is predicated on this unpersuasive argument, we find Appellant's argument regarding Newham and Vavrus unpersuasive for the same reasons discussed above for claim 1. Appellant's additional argument that Ruwe fails to "mention the limitation of a binaural audio signal" is unpersuasive because the Examiner relies on Newham and Vavrus rather than Ruwe to teach "a binaural signal," as claimed, and, therefore, the argument is not responsive to the rejection. *See Nat'l Steel Car, Ltd. v. Canadian Pac. Ry., Ltd.*, 357 F.3d 1319, 1336–37 (Fed. Cir. 2004) (rejecting argument directed at the wrong reference).

Appellant, therefore, has not demonstrated error in the Examiner's findings, and so we sustain the Examiner's obviousness rejection of dependent claims 3 and 5.

Obviousness Rejection of Claim 4

The Examiner finds the combination of Newham, Vavrus, and Ruwe teaches or suggests "wherein the spatial position of the signal component relative to a plane is dependent on a difference between the value of the performance data and a predetermined reference value," as recited in claim 4. Final Act. 9–10; Ans. 5.

Appellant argues "[t]here is no mention of the spatial position of the signal component relative to a plane that is dependent on the difference between the sensor data and a predetermined reference value." Appeal Br. 45. Rather, "Ruwe is directed to a biometric monitoring assembly which does not include anything related to spatial positioning or performance data. Whether the warning signal is outputted by the acoustic driver of the ear cup has nothing to do with spatial positioning." *Id.* (citing Ruwe ¶ 32).

The Examiner responds that “there would have to be a comparison between a reference value and the sensor value to determine, for example, whether the oxygen levels are unsafe therefore invoking the elicitation of a warning signal.” Ans. 5.

Appellant’s argument is persuasive. Although we agree that the portion of Ruwe cited by the Examiner describes a processor that outputs an acoustic warning when sensor signal data indicates a problem, perhaps by crossing a threshold, the Examiner does not demonstrate sufficiently that Ruwe teaches or suggests “the spatial position of the signal component relative to a plane is dependent on a difference between the value of the performance data and a predetermined reference value,” as recited in claim 4. According to the Specification, the generated binaural audio signal used to represent the performance data “is audible for the user at a particular spatial position” that “can be shifted or changed when the corresponding value of the performance data changes.” Spec. 25:15–32. The shifting may “take place relative to a vertical plane extending through the body of the user or relative to a horizontal plane extending through the user’s head.” *Id.* We do not find, and the Examiner does not show, how the cited portion of Ruwe teaches this limitation.

Because we agree with at least one of the dispositive arguments advanced by Appellant for the obviousness rejection of claim 4, we need not reach the merits of Appellant’s other arguments. Accordingly, based on the record before us, we do not sustain the Examiner’s obviousness rejection of claim 4 over the combined teachings of Newham, Vavrus, and Ruwe.

CONCLUSION

We affirm the Examiner's rejection of claims 1, 2, and 7–11 under 35 U.S.C. § 103 as unpatentable over the combined teachings of Newham and Vavrus.

We affirm the Examiner's rejection of claims 3 and 5 under 35 U.S.C. § 103 as unpatentable over the combined teachings of Newham, Vavrus, and Ruwe.

We reverse the Examiner's rejection of claim 4 under 35 U.S.C. § 103 as unpatentable over the combined teachings of Newham, Vavrus, and Ruwe.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 2, 7–11	103	Newham, Vavrus	1, 2, 7–11	
3, 5	103	Newham, Vavrus, Ruwe	3, 5	
4	103	Newham, Vavrus, Ruwe		4
Overall Outcome			1–3, 5, 7–11	4

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED IN PART