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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte RICHARD E. GREGG

Appeal 2020-000619
Application 15/039,975
Technology Center 3700

Before DANIEL S. SONG, BRETT C. MARTIN, and
ANNETTE R. REIMERS, *Administrative Patent Judges*.

MARTIN, *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 1–20, which constitute all the claims pending in this application. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Koninklijke Philips N.V. Appeal Br. 3.

CLAIMED SUBJECT MATTER

The claims are directed “to electrocardiograph (‘ECG’) equipment and display/interpretation of ECG signals”. Spec. 1, ll. 5–6. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. An automated age detection system, comprising:
 - a patient monitoring lead assembly and a patient monitoring device;
wherein the patient monitoring lead assembly is operable in communication with the patient monitoring device to conduct electrical activity of a heart of a patient to the patient monitoring device;
 - wherein, responsive to the electrical activity of the heart of the patient, the patient monitoring device is configured to calculate at least one electrocardiogram feature from at least one electrocardiogram measurement of the electrical activity of the heart of the patient; and
 - wherein the patient monitoring device is further configured to classify the patient as an adult patient or a pediatric patient exclusively from the electrical activity of the heart of the patient as represented by the calculated at least one electrocardiogram feature.

REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Forbes	US 6,132,381	Oct. 17, 2000
Jayne	US 2003/0195567 A1	Oct. 16, 2003
Freeman	US 2005/0267536 A1	Dec. 1, 2005
Nishimoto	JP 2010162069 A	July 29, 2010

REJECTIONS

Claims 1, 6, 10, 11, 13, 15, 16, and 18 stand rejected under 35 U.S.C. § 102(a)(1) as anticipated by Nishimoto. Ans. 3.

Claims 1–3, 6, 7, 10, 11, 13, 15, 16, 18, and 20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Nishimoto. Ans. 5.

Claims 1–11, 13, 15, 16, 18, and 20 stand rejected under 35 U.S.C. § 103 as unpatentable over Jayne and Nishimoto. Ans. 6.

Claims 12, 14, 17, and 19 stand rejected under 35 U.S.C. § 103 as unpatentable over Nishimoto and Forbes. Ans. 8.

OPINION

Nishimoto

Although Appellant provides several groupings of claims with separate arguments, the arguments for all groups center on Nishimoto and its teachings. As such, all claims are argued together and we select claim 1 as representative. Accordingly, all claims stand or fall with our disposition of claim 1.

There does not appear to be any disagreement over what constitutes Appellant’s invention or the content of the prior art. The disagreement here lies in whether the claims encompass the teachings of Nishimoto. Put another way, the disagreement lies over whether Appellant has properly claimed what appears to be an invention not taught in the prior art of record.

Appellant’s invention is directed toward analyzing ECG features related specifically to activity of the heart, as opposed to other ECG artifacts, such as respiratory artifacts, often found in an ECG, in order to determine a patient’s age. Nishimoto likewise analyzes an ECG in order to determine a patient’s age, but does so by extracting the respiratory artifact from the ECG, thereby not utilizing the electrical activity actually related to the heart.

Appellant asserts that the Specification “defines the term ‘ECG features’ to broadly encompass calculated ECG parameters quantitatively decipherable for distinguishing a pediatric patient from an adult patient.” Reply Br. 9 (citing Spec. p. 3, l. 31–p. 4, l. 3). According to Appellant, ECG features “include[] both ECG features representative of electrical activity of the heart and ECG features representative of other physiological activities, such as, for example, respiratory activity of lung.” Reply Br. 9. Appellant argues, however, that the claimed “electrical activity of the heart of the patient” and similar terms limit the claims only to ECG features related to heart activity and exclude features such as respiratory artifacts, i.e., what is taught in Nishimoto.

Appellant’s argument appears on its face to properly differentiate heart-made activity from other artifacts, such as the respiratory artifact taught in Nishimoto. The problem, as the Examiner points out, however, is that the Specification describes the specific claim terms in a way so as to allow the Examiner’s interpretation to include the teachings of Nishimoto. As the Examiner explains, the “[S]pecification states on page 4 that ‘the term “ECG features” as used in the present application broadly encompasses calculated ECG parameters quantitatively decipherable for distinguishing a pediatric patient from an adult patient.’” Ans. 10. The Examiner also explains that “Nishimoto discloses the variation in RR intervals² is indicative of age (par. [0052]) and the actual age of a patient can be exclusively quantified via the extracted respiration variations (par. [0055]), i.e. exclusively determined from electrical activity of the heart.” Ans. 11.

² The RR interval is the time between QRS complexes.

The Examiner concludes that “[r]egardless of whether the RR interval variation is caused by respiration or quantifies respiration in some way, the RR interval meets the claim limitation of ‘at least one electrocardiogram feature’ obtained ‘from the electrical activity of the heart.’” Ans. 12.

Lastly, the Examiner explains that in Nishimoto “[n]o signal other than an ECG signal is used to obtain the respiration variation of the RR interval as found within the ECG.” *Id.*

Although the RR interval is affected by respiration, it still is indicative of a patient’s heart rate. *See* Ans. 11 (citing Nishimoto ¶¶ 42–44). As such, this is electrical activity of the heart, it is merely affected by respiration. Nishimoto does teach filtering out the signals indicative of respiratory variations in the ECG signal, but the activity being measured is heart rate, which is electrical activity of the heart.

The Examiner’s finding and reasoning is further bolstered by the amendments made during prosecution. Although Appellant added specific language regarding ECG features and then added that the data used is “*exclusively* from the electrical activity of the heart” in an attempt to differentiate from Nishimoto, given the disclosure in the Specification and the Examiner’s explanation thereof, these changes are insufficient to exclude what is taught in Nishimoto. The language used in the claims simply does not adequately differentiate from Nishimoto’s teachings.

As to the nominal arguments made regarding Jayne, Freeman, and Forbes, we find that the Examiner adequately addressed each of those in the Answer. *See* Ans. 13–17. Because we find the Examiner’s argument more persuasive than Appellant’s, we sustain the Examiner’s rejections.

CONCLUSION

The Examiner's rejection is AFFIRMED.

More specifically,

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 6, 10, 11, 13, 15, 16, 18	102	Nishimoto	1, 6, 10, 11, 13, 15, 16, 18	
1-3, 6, 7, 10, 11, 13, 15, 16, 18, 20	103	Nishimoto	1-3, 6, 7, 10, 11, 13, 15, 16, 18, 20	
1-11, 13, 15, 16, 18, 20	103	Jayne, Nishimoto	1-11, 13, 15, 16, 18, 20	
12, 14, 17, 19	103	Nishimoto, Forbes	12, 14, 17, 19	
Overall Outcome			1-20	

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