

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MEDTRONIC PLC,
Petitioner,

v.

MASIMO CORPORATION,
Patent Owner.

Case IPR2016-00057
Patent 8,560,034 B1

Before KEN B. BARRETT, BENJAMIN D. M. WOOD, and
GEORGIANNA W. BRADEN, *Administrative Patent Judges*.

BARRETT, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

Medtronic PLC (“Petitioner”) filed a Petition requesting *inter partes* review of U.S. Patent No. 8,560,034 B1 (“the ’034 patent”). Paper 1 (“Pet.”). The Petition challenges the patentability of claims 1, 5, and 6 of the ’034 patent on the ground of obviousness under 35 U.S.C. § 103. Masimo Corporation (Patent Owner) filed a Preliminary Response to the Petition. Paper 7 (“Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted “unless . . . the information presented in the petition . . . 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.”

After considering the information presented in the Petition, we determine that Petitioner has not established a reasonable likelihood that it would prevail with respect to any of the claims challenged in the Petition. Accordingly, we do not authorize an *inter partes* review to be instituted as to any challenged claim of the ’034 patent.

A. Related Proceedings

One or both parties identify, as matters involving or related to the ’034 patent, Patent Trial and Appeal Board cases IPR2016-00058 (the ’034 patent) and IPR2016-00056 (U.S. Patent No. 7,496,393), and Board of Patent Appeals and Interferences case Interference No. 105,471. Pet. 1; Paper 5, 3; *see, e.g.*, Prelim. Resp. 1.

Additionally, Patent Owner identifies several judicial and administrative matters concerning related patents. *See* Paper 5, 1–4.

B. The '034 Patent

The '034 patent pertains to the processing of measured signals, in the context of blood oxygen saturation systems, in a way “which facilitates minimizing the correlation between the primary signal portion and the secondary signal portion in order to produce a primary and/or secondary signal.” Ex. 1001, col. 1, ll. 15–29. “Complications arising in these measurements are often due to motion of the patient, both external and internal (muscle movement, vessel movement, and probe movement, for example), during the measurement process.” *Id.* at col. 2, ll. 22–26. Motion artifacts, introduced by patient movement, distort the measured signal. *Id.* at col. 3, ll. 5–8.

A monitor for pulse oximetry saturation measurement uses two light emitting diodes (LEDs) that emit light at different wavelengths, for example, red (R) and infrared (IR). *Id.* at col. 4, l. 46–49, col. 33, ll. 58–65. The light passes through a portion of the body where blood flows, such as a finger, and is received by a photodetector positioned on the opposite side of the finger. *Id.* at col. 4, ll. 49–52, col. 33, ll. 58–62. The '034 patent explains that “[t]he attenuated signals generally comprise both primary . . . and secondary (noise) signal portions.” *Id.* at col. 4, ll. 52–54. The “noise” of the secondary signal includes “venous oxygen saturation and other parameters.” *Id.* at col. 5, ll. 25–26. These other parameters of the secondary portion include “artifacts due to patient movement which causes the venous blood to flow in an unpredictable manner.” *Id.* at col. 4, ll. 31–38; *see also id.* at col. 34, l. 7–15 (the '034 patent also referring to “[e]rratic motion induced noise”). According to the '034 patent, where the two light signals are measured substantially simultaneously, the secondary signal

components are correlated to each other “because any random or erratic functions affect each measurement in nearly the same fashion” and the primary signal components are correlated to each other. *Id.* at col. 12, ll. 4–10.

In the model of the '034 patent, coefficients relating the two signal portions may be determined by minimizing the correlation between the primary and secondary signal portions. *Id.* at col. 5, ll. 19–29. In the method of claim 1, the two signals (*e.g.*, red and infrared) are mathematically manipulated based on two assumptions. First, the model assumes that the amount of motion affecting each of the two light signals is the same because the two signals are measured so closely together in time. *Id.* at col. 64, ll. 43–44; *see id.* at col. 12, ll. 4–10 (“any random or erratic functions affect each measurement in nearly the same fashion.”). Second, the model assumes that the motion components of the two signals are proportional to each other. *Id.* at col. 64, ll. 45–46; *see id.* at col. 12, ll. 5–25 (discussing proportionality constants between the secondary signal portions).

C. The Claim

Claims 1 and 5 are independent claims. Claim 1, reproduced below, is illustrative:

1. A method for measuring saturation of a blood constituent in a patient comprising the steps of:

irradiating said patient with electromagnetic radiation of two discrete, different wavelengths;

sensing an intensity of said radiation for each of said wavelengths after it passes through a portion of said patient to produce first and second intensity signals including motion components; and

determining said saturation by mathematically

manipulating said first and second intensity signals without subtracting said motion components and with the assumptions that

i) an amount of motion is the same at the same time for each of said intensity signals, and

ii) the motion components of said intensity signals are proportional to one another.

Ex. 1001, col. 64, ll. 31–46. Independent claim 5 recites an apparatus having a “control means for determining said saturation.” *Id.* at col. 65, l. 48–col. 66, l. 11.

D. Applied References

Reference			Exhibit No.
Diab	WO 92/15955	Sept. 17, 1992	Ex. 1003
Weinstein	US 5,208,786	May 4, 1993	Ex. 1004
Admitted Prior Art in the '034 patent			Ex. 1001

Petitioner relies also on the Declaration of Dr. Daniel van der Weide, dated October 20, 2015, (Ex. 1002) in support of Petitioner’s arguments.

E. Asserted Ground of Unpatentability

Petitioner asserts that claims 1, 5, and 6 are unpatentable under 35 U.S.C. § 103(a) as obvious over Diab, Weinstein, and Admitted Prior Art.

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see also In re Cuozzo*

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