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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/229,743	03/28/2014	Michael Eichler	P16807	7999

47988 7590 10/16/2019

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ART UNIT	PAPER NUMBER
3771	

MAIL DATE	DELIVERY MODE
10/16/2019	PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MICHAEL EICHLER

Appeal 2018-003477
Application 14/229,743
Technology Center 3700

Before STEFAN STAICOVICI, MICHELLE R. OSINSKI, and LEE L. STEPINA, *Administrative Patent Judges*.

STAICOVICI, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant[1] appeals under 35 U.S.C. § 134(a) from the Examiner's decision in the Final Office Action (dated Mar. 20, 2017) rejecting claims 1 and 3–8.[2] We have jurisdiction over this appeal under 35 U.S.C. § 6(b).

SUMMARY OF DECISION

We REVERSE.

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[1] Carl Zeiss Meditec AG is the Applicant as provided in 37 C.F.R. § 1.46 and is identified as the real party in interest in Appellant's Appeal Brief (filed Oct. 10, 2017). Appeal Br. 2.

[2] Claim 2 is canceled. Appeal Br. 4.

INVENTION

Appellant's invention relates to an "ophthalmic surgical system" that "repeatedly provide[s] periods of time during phacoemulsification, during which the eye can cool down." Spec. 1, l. 12, Spec. 5, ll. 21–22.

Claims 1, 7, and 8 are independent. Claim 1 is illustrative of the claimed invention and reads as follows:

> 1. An ophthalmic surgical control apparatus configured to be connectable to an ophthalmic surgical piezo handpiece for emulsifying an eye lens, the piezo handpiece having a hollow needle defining a longitudinal axis and having an ultrasonic resonant frequency, the ophthalmic surgical control apparatus comprising:
>
> a frequency generator having a first and a second frequency module;
>
> said first frequency module being configured to generate a first oscillation signal having a first frequency f_1 and said first oscillation signal being a sinusoidal vibration in accordance with the equation $y_1 = \sin(2\pi f_1 \cdot t)$;
>
> said first frequency being lower than the ultrasonic resonant frequency of the piezo handpiece;
>
> said second frequency module being configured to generate a second oscillation signal having a second frequency f_2 and said second oscillation signal being a sinusoidal vibration in accordance with the equation $y_2 = \sin(2\pi f_2 \cdot t)$;
>
> said second frequency being greater than the ultrasonic resonant frequency of the piezo handpiece;
>
> a frequency generator control module configured to control said first and said second frequency modules;
>
> a superposition module configured to additively superpose said first oscillation signal and said second oscillation signal in accordance with the equation $y_u = y_1 + y_2$ so as to generate a superposition oscillation signal having a superposition oscillation frequency;
>
> said superposition module being further configured to provide said superposition oscillation signal for operation of the piezo handpiece; and,

> said piezo handpiece containing a plurality of piezo stacks connected mechanically in series so as to permit an oscillation of said hollow needle only along said longitudinal axis.

REJECTIONS

I. The Examiner rejects claims 1 and 3–7 under 35 U.S.C. § 103(a) as being unpatentable over Salehi,[3] Vaitekunas,[4] and Zhou.[5]

II. The Examiner rejects claim 8 under 35 U.S.C. § 103(a) as being unpatentable over Salehi, Vaitekunas, Zhou, and Urich.[6]

ANALYSIS

Rejection I

Each of independent claims 1 and 7 requires, *inter alia*, "a hollow needle defining a longitudinal axis and . . . an oscillation of said hollow needle *only* along said longitudinal axis." Appeal Br. 40, 42–43 (Claims App.) (emphasis added).

The Examiner finds that the ophthalmic surgical control apparatus of Salehi, as modified by Vaitekunas and Zhou, "will deliver an oscillation of said hollow needle only along said longitudinal axis since both the torsional and longitudinal oscillation generated from the two frequencies of Salehi are along the longitudinal axis." Final Act. 4.

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[3] Salehi et al., US 2007/0249942 A1, published Oct. 25, 2007.
[4] Vaitekunas, US 5,630,420, issued May 20, 1997.
[5] Zhou, US 2012/0065578 A1, published Mar. 15, 2012.
[6] Urich et al., US 6,884,252 B1, issued Apr. 26, 2005.

Appellant argues that in contrast to each of independent claims 1 and 7, in which vibration is imparted to a "hollow needle that is only along the longitudinal axis" of the needle, Salehi's handpiece "execute[s] a longitudinal movement and a torsional movement." Appeal Br. 22–23.

In response, the Examiner contends that neither of independent claims 1 and 7 "require[s] the frequency to be in a specific plane." Ans. 4.[7] Thus, according to the Examiner, because "the resulting frequency does have both longitudinal and torsional motion, each motion can be seen to be 'along the longitudinal axis' depending on the orientation of the device" of Salehi, as modified by Vaitekunas and Zhou. *Id.* The Examiner explains that "the torsional movement in Salehi" constitutes an "oscillation *along* the longitudinal axis, since it is rotation *about* the longitudinal axis *along* the length of the device." Adv. Act. 2 (emphasis added).[8]

We do not agree with the Examiner that rotation "about" a longitudinal axis constitutes oscillation "along" that same longitudinal axis.[9] Even though the torsional (rotational) movement of the needle in the ophthalmic surgical control apparatus of Salehi, as modified by Vaitekunas and Zhou occurs along the length of the needle, as the Examiner asserts, this does not mean that the torsional (rotational) movement of the needle occurs in a line in the direction of the longitudinal axis. Rather, the torsional

[7] Examiner's Answer, dated Dec. 12, 2017.
[8] Advisory Action, dated Aug. 10, 2017.
[9] Ordinary and customary meanings of the terms "about" and "along" are "in a circle around : on every side of : AROUND" and "in a line matching the length or direction of," respectively.
See MERRIAM-WEBSTER, https://www.merriam-webster.com/dictionary/about, https://www.merriam-webster.com/dictionary/along (last visited October 4, 2019).

(rotational) movement of the needle occurs around the longitudinal axis. We, thus, agree with Appellant that because the *torsional* movement of the needle in the ophthalmic surgical control apparatus of Salehi, as modified by Vaitekunas and Zhou, is "around the longitudinal axis," such movement of the needle is not "along the longitudinal axis." Reply Br. 5.[10] Appellant is correct that movement "'[a]long [a longitudinal axis] is not the same as around the longitudinal axis." *Id.*

As such, we agree with Appellant that the combined teachings of Salehi, Vaitekunas, and Zhou disclose a "*combined torsional* movement around the longitudinal axis and . . . *along* the longitudinal axis" of the needle. Reply Br. 6 (emphasis added). Hence, the combined teachings of Salehi, Vaitekunas, and Zhou do not disclose "oscillation of said hollow needle *only along* said longitudinal axis," as called for by each of independent claims 1 and 7. *See* Appeal Br. 40, 43 (emphasis added).

In conclusion, for the foregoing reasons, we do not sustain the rejection under 35 U.S.C. § 103(a) of claims 1 and 3–7 as unpatentable over Salehi, Vaitekunas, and Zhou.

Rejection II

Similar to independent claims 1 and 7, independent claim 8 recites a "a hollow needle defining a longitudinal axis . . . to impart vibrations to said hollow needle *only* along said longitudinal axis." Appeal Br. 43–44 (Claims App.) (emphasis added).

[10] Appellant's Reply Brief, filed Feb. 12, 2018.

The Examiner's use of Urich does not remedy the deficiency of the Examiner's interpretation of the combined teachings of Salehi, Vaitekunas, and Zhou discussed *supra*. *See* Final Act. 7–9.

Accordingly, for the same reasons discussed above, we also do not sustain the rejection of claim 8 as unpatentable over the combined teachings of Salehi, Vaitekunas, Zhou, and Urich.

CONCLUSION

Claims Rejected	**35 U.S.C. §**	**Basis**	**Affirmed**	**Reversed**
1 and 3–7	103(a)	Salehi, Vaitekunas, and Zhou		1 and 3–7
8	103(a)	Salehi, Vaitekunas, Zhou, and Urich		8
Overall outcome				1 and 3–8

REVERSED