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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte HÅKON SAGBERG, BRITTA GRENNBERG FISMEN,
KARI ANNE HESTNES BAKKE, JON TSCHUDI,
IB-RUNE JOHANSEN, and KNUT BAEROE SANDVEN

Appeal 2018-004028
Application 14/362,944
Technology Center 2800

Before MAHSHID D. SAADAT, ALLEN R. MacDONALD, and
NABEEL U. KHAN, *Administrative Patent Judges*.

KHAN, *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 1–15. 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(a). Appellant identifies the real party in interest as GasSecure AS. Appeal Br. 2.

CLAIMED SUBJECT MATTER

Appellant describes the invention as relating to “sensors for measuring the concentration of a gas by measuring the absorption of infrared light thereby.” Spec. ¶ 1:3–4.

Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A gas sensor for measuring a concentration of a gas comprising:

a light source arranged to emit pulses of light;

a measurement volume;

a detector arranged to receive light that has passed through the measurement volume; and

an adaptable filter disposed between the light source and the detector and having a measurement state in which it passes at least one wavelength band which is absorbed by the gas and a reference state in which said wavelength band is attenuated relative to the measurement state wherein the adaptable filter is arranged to change between one of said measurement state and said reference state to the other at least once during each pulse.

REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Noro	Makoto Noro et al., <i>CO₂/H₂O Gas Sensor Using a Tunable Fabry-Perot Filter With Wide Wavelength Range</i> , The Sixteenth Annual International Conference on Micro Electro Mechanical Systems, IEE MEMS-03 Kyoto (January 2003), 319–322	Jan. 2003
DiFoggio	US 2007/0159625 A1	July 12, 2007
Flanders	US 6,366,592 B1	Apr. 2, 2002
Dreyer	US 2010/0225917 A1	Sept. 9, 2010
Norman	US 2006/0093523 A1	May 4, 2006
Sagberg	US 2014/0350870 A1	Nov. 27, 2014

REJECTIONS

1. Claims 1, 2, 5, 7, 9–13, and 15 stand rejected under 35 U.S.C. § 102(b) as anticipated by Noro, or, in the alternative, under 35 U.S.C. § 103(a) as unpatentable over Noro. Final Act. 3–8.
2. Claim 3 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Noro and DiFoggio. Final Act. 8–9.
3. Claim 4 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Noro and Flanders. Final Act. 9.
4. Claims 6 and 14 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Noro and Dreyer. Final Act. 9–10.
5. Claim 8 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Noro and Norman. Final Act. 11.
6. Claim 1 is provisionally rejected on the ground of non-statutory double patenting as being unpatentable over claim 26 of US Patent Application No. 2014/0350870. Final Act. 13.

OPINION

Provisional Double Patenting Rejection

The Examiner provisionally rejects claim 1 on the grounds of non-statutory obviousness-type double patenting over claim 26 of co-pending Application No. 14/362,945. Final Act. 13. We do not reach the merits of the Examiner’s obviousness-type double patenting rejection because this issue is not ripe for decision by the Board. Panels have the flexibility to reach or not reach provisional double-patenting rejections. *See Ex parte Moncla*, 95 USPQ2d 1884 (BPAI 2010) (precedential).

Prior-Art Rejections

Claim 1 recites “an adaptable filter . . . arranged to change between one of [a] measurement state and [a] reference state to the other at least once during each pulse.” The Examiner finds Noro discloses the aforementioned element of claim 1 (or alternatively, the aforementioned element of claim 1 would have been obvious to one of ordinary skill in the art, at the time of the claimed invention, in light of Noro) because Noro discloses, *inter alia*, a gas sensor that includes a tunable micro-electromechanical system (“MEMS”) Fabry-Perot filter (*i.e.*, “filter” or “FPF”), where the voltage applied to the filter is alternatively changed from a voltage associated with sensing CO₂/H₂O gas to a voltage associated with a reference measurement. *See* Final Act. 3–4 (citing Noro 319–320, 322); *see also* Ans. 2–5.

Appellant argues Noro does not disclose the feature of changing an adaptable filter between a reference state and a measurement state at least once during each pulse in a gas sensor. *See* Appeal Br. 5. As argued by Appellant, Noro describes, in a first example, obtaining gas sensing measurements where the filter is included in a gas sensor and is used to

select a gas species to be measured, and further describes, in a second separate example, performing a long-term stability test on the filter, which Appellant argues is an entirely different operation from obtaining gas sensing measurements. *See* Appeal Br. 5–6. Thus, as argued by Appellant, the long-term stability test is a separate test of the filter that is not carried out in the gas sensor, and Noro’s mention of applying a square wave voltage during a long-term stability test is not a disclosure of applying a square wave voltage to the filter during a gas sensor measurement. *See* Appeal Br. 6–7.

We are not persuaded the Examiner erred. We agree with the Examiner’s finding that Noro explicitly discloses that a voltage applied to the filter is alternatively changed for sensing CO₂/H₂O gas (*i.e.*, a measurement state) and a reference measurement (*i.e.*, a reference state). *See* Ans. 3; *see also* Noro 322. We also agree with the Examiner’s finding that Noro explicitly discloses an example where a square wave of zero and CO₂ voltage is applied to the filter with a frequency of 5 Hz. *See* Final Act. 4 (citing Noro 322). Thus, we agree with the Examiner that Noro explicitly discloses “an adaptable filter . . . arranged to change between one of [a] measurement state and [a] reference state to the other at least once during each pulse,” as recited in claim 1.

Appellant’s argument that Noro does not disclose changing an adaptable filter between a reference state and a measurement state at least once during each pulse in a gas sensor is not persuasive, as we agree with the Examiner that Appellant has failed to cite any passage within Noro, or provide any other evidence, to support Appellant’s contention that Noro’s long-term stability test for the filter is an entirely different operation from obtaining gas sensing measurements using Noro’s gas sensor. Mere attorney arguments and conclusory statements that are unsupported by factual

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evidence are entitled to little probative value. *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997); see also *In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984).

Appellant further argues it would not be obvious to include the feature of changing between a measurement state and reference state at least once every pulse to the gas sensor disclosed in Noro. *See* Appeal Br. 7. As argued by Appellant, the Examiner has failed to identify any passage in Noro that supports the contention that the use of a 5 Hz square wave voltage during the stability test implies that a square wave voltage is also used during gas sensing. *See id.* As also argued by Appellant, modifying the features of the gas sensor of Noro would frustrate the principle of operation of the gas sensor of Noro because the gas sensor would not function reliably if a 5 Hz square wave voltage was applied to the filter during gas sensing measurements. *See* Appeal Br. 7–8. As additionally argued by Appellant, the Examiner has not shown the proper motivation for the alleged modification, because there is nothing in Noro that would lead a person skilled in the art to introduce the feature of changing between a measurement state and a reference state at least once during each pulse, rather than using a separate reference measurement to normalize the absorption wavelength measurement. *See* Appeal Br. 9.

Even assuming *arguendo* that Noro does not anticipate claim 1, these arguments are not persuasive either. More specifically, even assuming *arguendo* that Noro fails to explicitly disclose “an adaptable filter . . . arranged to change between one of [a] measurement state and [a] reference state to the other at least once during each pulse,” as recited in claim 1, we agree with the Examiner that it would have been obvious to a person of ordinary skill in the art, at the time of the claimed invention, to modify the

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voltage applied to Noro's filter to change between one of a measurement state and a reference state at least once during each pulse in light of Noro's disclosure of both an operation of a gas sensor including an adaptable filter and a long-term repetition-stability test of the adaptable filter that applies a 5 Hz square wave voltage to the filter. *See* Final Act. 4. "Combining two embodiments disclosed adjacent to each other in a prior art [reference] does not require a leap of inventiveness." *Boston Scientific Scimed, Inc. v. Cordis Corp.*, 554 F.3d 982, 991 (Fed. Cir. 2009).

Appellant's argument that there is no evidence that the use of a 5 Hz square wave voltage during the stability test implies that a square wave voltage is also used during gas sensing is not persuasive. Noro explicitly discloses that the voltage applied to the filter is alternatively changed between a measurement state and a reference state during the operation of the gas sensor. *See* Noro 322. Further, Appellant has failed to identify a portion of Noro, or any other evidence, supporting its contention that the square wave voltage applied to the filter during the stability test cannot also be used during operation of the gas sensor. *See* Ans. 4.

Similarly, Appellant has not identified any portion of Noro, or provided any evidence, that supports its contention that applying a square wave voltage to the filter during operation of the gas sensor disclosed in Noro would cause the filter not to function reliably. Thus, Appellant's argument that the Examiner's proposed modification of Noro would change the principle of operation of Noro's gas sensor is not persuasive either.

Further, Appellant's argument that the Examiner has failed to articulate the proper motivation for the Examiner's proposed modification is also not persuasive. As Noro explicitly discloses applying a square wave voltage of a reference state and a measurement state to the filter with a

frequency of 5 Hz (*see* Noro 322), the motivation for the proposed modification is found in the Noro reference itself.

We have considered Appellant's other arguments in its Reply Brief, and we also do not find them persuasive. Accordingly, we sustain the Examiner's rejection of independent claim 1 under 35 U.S.C. § 102(b), and the alternative rejection of claim 1 under 35 U.S.C. § 103(a). The Examiner rejects independent claim 9 on a similar basis as claim 1, and therefore we also sustain the Examiner's alternative rejections of claim 9 under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a). We also sustain the alternative rejections of dependent claims 2–8 and 10–15 under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a), as they are not separately argued by Appellant.

CONCLUSION

We sustain the Examiner's alternative rejections of claims 1, 2, 5, 7, 9–13, and 15 under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a).

We sustain the Examiner's rejection of claims 3, 4, 6, 8, and 14 under 35 U.S.C. § 103(a).

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 2, 5, 7, 9–13, 15	102(b)/103(a)	Noro	1, 2, 5, 7, 9–13, 15	
3	103(a)	Noro, DiFoggio	3	
4	103(a)	Noro, Flanders	4	
6, 14	103(a)	Noro, Dreyer	6, 14	
8	103(a)	Noro, Norman	8	
Overall Outcome			1–15	

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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