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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte LUCAS LUETHY and BEAT LUETHY

Appeal 2019-006016
Application 15/472,777
Technology Center 1700

Before LINDA M. GAUDETTE, FRANCISCO C. PRATS, and LILAN REN, *Administrative Patent Judges.*

GAUDETTE, *Administrative Patent Judge.*

DECISION ON APPEAL[1]

The Appellant[2] appeals under 35 U.S.C. § 134(a) from the Examiner's decision finally rejecting claims 10–18 and 30 under 35 U.S.C. § 103 as

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[1] This Decision includes citations to the following documents: Specification filed Mar. 29, 2017, as amended ("Spec."); Final Office Action dated Aug. 28, 2018 ("Final Act."); Appeal Brief filed Jan. 16, 2019 ("Appeal Br."); Claims Appendix filed Feb. 2, 12, 2019 ("Claims App."); Examiner's Answer dated July 8, 2019 ("Ans."); and Reply Brief filed Aug. 7, 2019 ("Reply Br.").

[2] We use the word Appellant to refer to "applicant" as defined in 37 C.F.R. § 1.42. The Appellant identifies the real party in interest as CTC Analytics AG. Appeal Br. 1.

unpatentable over Tajima (US 5,919,706, iss. July 6, 2999) in view of Stalder (US 2014/0150923 Al, pub. June 5, 2014).[3]

We REVERSE.

CLAIMED SUBJECT MATTER

The invention relates to a method for operating a dosing device that includes measuring the level of a liquid in the vessel or the level of a phase boundary in the liquid. Spec. 1:6–11. Claim 10, reproduced below, is illustrative of the claimed subject matter:

> 10. A method for operating a dosing device, said dosing device comprising a control unit and a dosing unit, said dosing unit having a cannula with *a first volume* and a tip, said dosing unit also comprising a sampling container fluidically connected to the cannula, said method comprising the following steps:
>
> a) moving the dosing unit linearly at *a predetermined speed* in a first direction along an axis, such that the cannula is moved into a vessel containing at least one liquid;
>
> b) aspirating a fluid constantly through the cannula, with *a predetermined volumetric flow*, by a pump device;
>
> c) measuring at least one optical parameter of the aspirated fluid using at least one optical sensor, which is arranged between the cannula and the sampling container;
>
> d) when a change of the at least one optical parameter is detected, using the control unit to store *a first position* of the dosing unit on the axis and interrupting the movement of the dosing unit;
>
> e) *using the control unit to calculate a second position of the dosing unit on the axis*, at which second position the tip of the cannula has penetrated a first phase boundary, in particular upon immersion into the liquid, *on the basis of the first*

[3] We have jurisdiction under 35 U.S.C. § 6(b).

> *position, the predetermined speed, the first volume and the predetermined volumetric flow*.

Claims App. (emphasis added).

OPINION

Claim 10, the sole independent claim on appeal, recites a method of operating a dosing device comprising a control unit and a dosing unit having a cannula with *a first volume*. Claim 10, preamble. The method includes steps of moving the dosing unit linearly along an axis at *a predetermined speed* into a vessel, and measuring an optical parameter of a fluid (e.g., first air and then liquid) aspirated through the cannula at *a predetermined volumetric flow*. *Id.* at steps a–c. When a change in the optical parameter is detected (e.g., when aspirated liquid reaches the optical sensor), the dosing unit's position on the axis is stored by the control unit as *a first position*. *Id.* at step d. In the final claim 10 method step, the control unit *calculates a second position* of the dosing unit on the axis *on the basis of the first position, the predetermined speed, the first volume, and the predetermined volumetric flow*. *Id.* at step e. The Appellant explains that "[b]ased on this calculation, the depth of the cannula in the liquid is known (the distance between the first and second positions)." Appeal Br. 12.

The Examiner found that Tajima discloses the claim 10 method except that Tajima does not disclose that the dosing unit includes a cannula. Final Act. 7–8. The Examiner determined that the ordinary artisan would have modified Tajima's dosing unit to include a cannula, as taught by Stalder, "to inject or [withdraw] a specified volume corresponding to the volume of fluid to be analyzed and such that contamination of the pump device by the fluid sample is prevented." *Id.* at 8.

The Appellant argues that the Examiner did not provide sufficient explanation or identify persuasive evidence to support a finding that Tajima, alone or in combination with Stalder, discloses or suggests claim 10, step e. *See* Appeal Br. 13–14; Reply Br. 3. Responsive to the Appellant's argument, the Examiner cites Tajima column 6, line 55 to column 7, line 10, and provides annotated copies of Tajima Figures 5 and 6 illustrating how the claimed first and second positions read on the movements of Tajima's dosing unit. *See* Ans. 13–14.

Tajima discloses that "operations of detecting a liquid level in [a] pipetting device" (Tajima 5:62–63) include the following: receiving reflected light from a liquid surface while moving a disposable tip toward the liquid surface (*id.* at 6:10–17); converting the measured light change amounts to voltage values (*id.* at 6:44–46); comparing these voltage values to a previously stored or predetermined voltage value, and terminating movement of the disposable tip when the voltage obtained by conversion of the measured light value equals the previously stored or predetermined voltage value, i.e., the value corresponding to the light change detected when the disposable tip reaches the liquid surface (*id.* at 6:30–40, 44–50); and measuring the time period required to reach the previously stored or predetermined voltage value, and computing a liquid level by comparing the measured time period to a previously stored time period (*id.* at 6:55–59). Tajima discloses that when the liquid level has been determined, the control section then instructs the driving circuit to move the disposable tip a certain distance into the liquid where liquid is drawn into the disposable tip. *Id.* at 7:1–10.

Having reviewed Tajima's disclosure, we are persuaded that the Examiner did not provide sufficient explanation or identify persuasive evidence to support a finding that the applied prior art discloses or suggests claim 10, step e. Tajima discloses that the CPU "previously stores therein, for instance, specified values or predetermined values identifying a reflected state of a light, executes computing and determining such as comparing the specified values or the predetermined values to measured values, and transmits an instruction for driving and controlling each of the mechanisms according to the determination." Tajima 5:37–43. In other words, Tajima, as modified by Stalder, discloses moving a cannula from a first position (i.e., the position at which the cannula reaches the liquid surface (*see* Ans. 14, annotated Tajima Figs. 5 & 6)) to a second position (i.e., the position to which the cannula is lowered into the liquid (*see id.*)) based on a comparison of measured values to previously stored or predetermined values. The Examiner has not explained how arriving at a second position based on comparisons to stored values teaches or suggests *calculating* a second position *based on* (1) the first position, (2) a predetermined speed of the dosing unit as it travels toward the liquid surface, (3) the cannula's volume, and (4) the predetermined volumetric flow at which the liquid is aspirated through the cannula, as recited in claim 10, step e. *See, e.g.*, Spec. 10:18–38 (describing the measurements and calculations used to determine the second position).

CONCLUSION

The Appellant has identified reversible error in the Examiner's obviousness determination as to claim 10. As the rejections of the dependent

claims are likewise based on the Examiner's unsupported findings, we do not sustain the rejection as to any of appealed claims 10–18 and 30.

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
10–18, 30	103	Tajima, Stalder		10–18, 30

REVERSED