



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/038,813	05/24/2016	Junichi TAKAHASHI	KUN-003	1685
32628	7590	09/19/2019	EXAMINER	
KANESAKA BERNER AND PARTNERS LLP 2318 Mill Road Suite 1400 ALEXANDRIA, VA 22314-2848			GERIDO, DWAN A	
			ART UNIT	PAPER NUMBER
			1797	
			NOTIFICATION DATE	DELIVERY MODE
			09/19/2019	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@ipfirm.com
office@uspatentagents.com
pair_lhbb@firsttofile.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JUNICHI TAKAHASHI

Appeal 2019-000347
Application 15/038,813
Technology Center 1700

Before MICHAEL P. COLAIANNI, GEORGE C. BEST, and
DEBRA L. DENNETT, *Administrative Patent Judges*.

BEST, *Administrative Patent Judge*.

DECISION ON APPEAL

The Examiner finally rejected claims 6–10 of Application 15/038,813 under 35 U.S.C. § 103 as obvious. Final Act. 1, 2 (Dec. 18, 2017).

Appellant¹ seeks reversal of the rejection pursuant to 35 U.S.C. § 134(a).

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

For the reasons set forth below, we *reverse*.

¹ Kurita Water Industries Ltd. is identified as the applicant and the real party in interest. Br. 2.

BACKGROUND

The '813 Application describes methods for: (i) measuring the residual chlorine concentration in water; and (ii) reducing or preventing staining by a chlorine-concentration-measuring reagent. *See* Spec. ¶¶ 1, 2; Fig. 1.

Claims 6 and 8 are representative of the '813 Application's claims and are reproduced below from the Claims Appendix to the Appeal Brief (emphasis added):

6. A method for measuring chlorine concentration, comprising:

mixing a chlorine-concentration-measuring composition comprising an aromatic sulfonic acid-based polymer or a salt thereof and a color reagent for detection of chlorine with water; and

determining a free residual chlorine concentration from change in color generated by the color reagent.

8. A method for reducing or preventing staining by a chlorine-concentration-measuring reagent, comprising:

mixing a chlorine-concentration-measuring composition comprising an aromatic sulfonic acid-based polymer or a salt thereof and a color reagent for detection of chlorine with water;

suppressing adhesion of reagent-derived precipitates during color reaction; and

dispersing a staining component into an aqueous system, as the polymer is adsorbed on a surface thereof.

Br. 9 (Claims App.).

REJECTION

On appeal, the Examiner maintains the following rejection:

1. Claims 6 and 8–10 are rejected under 35 U.S.C. § 103 as unpatentable over the combination of Mitsumoto² and Fujita.³ Final Act. 2;⁴ Answer 3.

DISCUSSION

Appellant argues for the reversal of the obviousness rejection of claims 6 and 8–10 on the basis of limitations present in independent claims 6 and 8. *See generally* Br. 6–8. We select claims 6 and 8 as representative. Accordingly, we limit our discussion to claims 6 and 8.

In rejecting claims 6 and 8, the Examiner relied on Mitsumoto, which discloses a color reagent for measuring the residual chlorine concentration in water. Final Act. 2–3 (citing Mitsumoto ¶¶ 13–41). The Examiner found that Mitsumoto describes each limitation of the claim, but does not teach or suggest adding the claimed aromatic sulfonic acid-based polymer to Mitsumoto’s color reagent and water. Final Act. 2–3.

The Examiner found that Fujita teaches a method of adding an aromatic sulfonic acid polymer to a water system for inhibiting chlorine’s corrosive effects therein. Final Act. 3 (citing Fujita 2:37–39, 4:16–38). The

² US 2007/0072305 A1, published Mar. 29, 2007.

³ US 5,820,763, issued Oct. 13, 1998.

⁴ The Examiner’s statement of the rejection in the Final Office Action included claim 7. *See* Final Act. 1, 2. Appellant, however, canceled claim 7 by Amendment filed Sept. 28, 2017. Accordingly, we view the Examiner’s inclusion of claim 7 in the rejection as a clerical error.

Examiner found Fujita teaches that the aromatic sulfonic acid polymer provides a protective film on the surfaces of a water system's metal components. Final Act. 3 (citing Fujita 2:37–39).

The Examiner determined that the ordinarily skilled artisan would have recognized from the protective film's corrosion protection properties that the film would also prevent staining component deposition on and precipitate adhesion to “the surface of the components of the water system of Fujita.” Adv. Act. 2. The Examiner concluded that it would have been obvious to a person of ordinary skill in the art at the time of the invention “to modify Mitsumoto[,] wherein an aromatic sulfonic acid polymer is added to the sample water in order to provide a protective film on the surfaces of *metal* components as taught by Fujita.” Final Act. 3 (emphasis added).

Appellant argues that Mitsumoto's invention is directed to attaining a coloring reagent composition for measuring residual chlorine concentration, which is capable of preventing crystallization at 5°C. Br. 6. Appellant further argues that, even assuming Fujita's polymer film would have prevented deposition of staining components and precipitate adhesion,

[t]here is *no* reason or motivation for a skilled artisan to look into Fujita (a low molecular weight polymer including aromatic sulfonic acid polymers for inhibiting corrosion) and pick up aromatic sulfonic acid polymers to apply to the composition for measuring residual chlorine concentration of Mitsumoto [*sic*, Mitsumoto] (for increasing solubility of the coloring reagent at low temperatures and preventing crystallization).

Id. at 7. In particular, Appellant contends “the mere fact that Fujita shows aromatic sulfonic acid polymers does not lead to the conclusion that a skilled artisan would combine Mitsumoto and Fujita and attain the method of the present application.” *Id.*

We are persuaded by Appellant’s arguments because the Examiner’s proposed modification assumes that Mitsumoto disperses a staining component into an aqueous system having metal surfaces therein. Our review of Mitsumoto finds no basis for the Examiner’s assumption.

The Examiner implicitly presumes that Mitsumoto’s color reagent for measuring the residual chlorine concentration circulates in a chlorinated water system similar to Fujita’s. *See* Final Act. 2–3; Adv. Act. 2; Answer 3–4. The Examiner found that Mitsumoto teaches “a composition for measuring residual chlorine concentration in water systems.” Answer 3 (citing Mitsumoto ¶ 4). The Examiner, however, has not shown that this color reagent composition contacts metal surfaces in Mitsumoto’s water system. The Examiner’s relied-upon passage only discloses that a chlorine agent circulates through Mitsumoto’s exemplary water systems. *See* Mitsumoto ¶ 4 (describing that “[a] chlorine agent such as sodium hypochlorite is added to domestic water such as city water or well water, or to pool water.”).

We find Mitsumoto only discloses that, in an automatic residual chlorine concentration measurement device, the color reagent “composition is added to the sample water *got from a water system* being monitored.” Mitsumoto ¶ 54 (emphasis added); *see also id.* ¶¶ 7–9, 55. Essentially, Mitsumoto’s continuous measurement method includes an initial “step of sampling water,” followed by the step of “adding a coloring reagent” to the sample water. *Id.* ¶ 7; *see also id.* ¶ 8. The Examiner has not found, nor can we identify, any disclosure that Mitsumoto’s water aliquot comprising a color reagent is introduced back into the water system. Thus, the Examiner’s presumption is unreasonable that Mitsumoto’s color reagent for

detection of chlorine circulates *through* a water system having metal surfaces therein.

The Examiner found that “Mitsumoto also teaches the composition comprising a surfactant for preventing contamination of an optical measurement cell . . . in an aqueous system.” Answer 3 (citing Mitsumoto ¶ 50); *see also* Mitsumoto ¶¶ 13, 54. Mitsumoto’s disclosure, however, only suggests that this water system’s optical measuring cell is constructed from a clear or transparent material, such as plastic, glass, or quartz.⁵ *See, e.g.*, Spec. ¶ 12.

On these facts, the Examiner reversibly erred in finding that Mitsumoto’s color reagent for detection of chlorine is utilized in a water system similar to Fujita’s, which includes metal surfaces that are susceptible to corrosion from chlorine. *See, e.g.*, Fujita 1:13–16. Therefore, the Examiner has not established that the ordinary skilled artisan would have been motivated to combine Mitsumoto’s color reagent for detection of chlorine with Fujita’s aromatic sulfonic acid-based polymer. *See, e.g.*, *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (“[I]t can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.”); *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements;

⁵ Along with an automatic residual chlorine concentration measurement device, Mitsumoto additionally describes a portable measurement device or a simpler manual measurement kit for on-site use. Mitsumoto ¶ 7. Such devices or kits suggest that they are similarly made of plastic, glass, or quartz materials.

instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.”).

In the absence of a reasoned explanation why the ordinarily skilled artisan would have modified Mitsumoto’s composition, the Examiner has engaged in impermissible hindsight in concluding that the applied prior art renders claims 6 and 8 obvious. *In re Rouffet*, 149 F.3d 1350, 1358 (Fed. Cir. 1998) (“hindsight” is inferred when the specific understanding or principal within the knowledge of one of ordinary skill in the art leading to the modification of the prior art in order to arrive at appellant’s claimed invention has not been explained); *In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967) (“A rejection based on section 103 clearly must rest on a factual basis, and these facts must be interpreted without hindsight reconstruction of the invention from the prior art”).

In view of the foregoing, we reverse the Examiner’s rejection of claims 6 and 8–10. 37 C.F.R. § 41.37(c)(1)(iv).

CONCLUSION

For the reasons set forth above, we reverse the § 103 rejection of claims 6 and 8–10 of the ’813 Application.

REVERSED