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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* RONALD KENT SPERRY  
and SUBRAMANYA G. PRASAD

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Appeal 2015-004850  
Application 13/089,546  
Technology Center 1700

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Before KAREN M. HASTINGS, GEORGE C. BEST, and  
N. WHITNEY WILSON, *Administrative Patent Judges*.

HASTINGS, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellants<sup>1</sup> appeal from the Examiner's decision finally rejecting claims 1–20. We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

We REVERSE.

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<sup>1</sup> The real party in interest is stated to be Flowserve Management Company (Appeal Br. 2).

Claim 1 is illustrative of the claimed subject matter (emphasis added to highlight key disputed limitations):

1. A method for *determining an apparent density of a fluid* being displaced by a pump having a motor comprising:

receiving, at a computer, sensor data indicative of voltage, current, and temperature of the motor;

*determining an expected torque value for the pump* using at least one of the voltage, the current, or the temperature of the sensor data and one or more sets of speed-torque relationships;

*determining an actual torque for the pump*, when the pump is in operation, using at least one of the voltage, the current, or the temperature of the sensor data;

*using the expected torque and actual torque to determine an apparent density of the fluid*;

using the apparent density to detect an irregular operating condition; and

generating an alert if the irregular operating condition is detected.

(Appeal Br. 23 (Claims App).)

The Examiner maintains the following rejections:

(i) claims 1, 2, and 5 are rejected under 35 U.S.C. § 102(b) as anticipated by Beck et al. (US 7,558,699 B2, issued July 7, 2009) (hereinafter “Beck”) as evidenced by *MICROMO Micro Motion Solutions (DC Motor Calculations)*, published April 4, 2008, <http://www.micromo.com/motor-calculations.aspx> (hereinafter “MICROMO”);

(ii) claims 3 and 4 are rejected under 35 U.S.C. § 103(a) as unpatentable over Beck in view of “Catalysts in Petroleum Refining,” *Proceedings of Conference on Catalysts in Petroleum Refining*, 171 (1989)

(hereinafter “Catalysts in Petroleum Refining”), as evidenced by MICROMO;

(iii) claims 6 and 13 are rejected under 35 U.S.C. § 103(a) as unpatentable over Beck in view of Hays et al. (US 6,260,004 B1, issued July 10, 2001) (hereinafter “Hays”), and further in view of Takamatsu (US 7,457,702 B2, issued Nov. 25, 2008) (hereinafter “Takamatsu”), as evidenced by MICROMO;

(iv) claims 7, 15, 16, 18, and 20 are rejected under 35 U.S.C. § 103(a) as unpatentable over Beck in view of Cox (US 4,911,893, issued Mar. 27, 1990) (hereinafter “Cox”), as evidenced by MICROMO;

(v) claims 8, 9, and 12 are rejected under 35 U.S.C. § 103(a) as unpatentable over Beck in view of Hays, as evidenced by MICROMO;

(vi) claims 10 and 11 are rejected under 35 U.S.C. § 103(a) as unpatentable over Beck in view of Hays, and further in view of Catalysts in Petroleum Refining, as evidenced by MICROMO;

(vii) claim 14 is rejected under 35 U.S.C. § 103(a) as unpatentable over Beck in view of Hays, and further in view of Cox, as evidenced by MICROMO;

(viii) claim 17 is rejected under 35 U.S.C. § 103(a) as unpatentable over Beck in view of Cox, and further in view of Catalysts in Petroleum Refining, as evidenced by MICROMO; and

(ix) claim 19 is rejected under 35 U.S.C. § 103(a) as unpatentable over Beck in view of Takamatsu, and further in view of Hays and Cox, as evidenced by MICROMO.

## ANALYSIS

Upon consideration of the evidence on this record and each of Appellants' contentions, we find that the preponderance of evidence on this record supports Appellants' position that the Examiner has not shown the applied prior art discloses or suggests a method that inherently includes the claimed step of using the expected and actual torque values to determine an apparent density of the fluid (Appeal Br. 10; Reply Br. 3–4).<sup>2</sup> We reverse the Examiner's § 102(b) rejection of claims 1, 2, and 5, and § 103 rejections of claims 3, 4, and 6–20 for the reasons set forth in the Briefs (Appeal Br. 10; Reply Br. 3–4).

We add the following for emphasis.

[U]nless a reference discloses within the four corners of the document not only all of the limitations claimed but also all of the limitations arranged or combined in the same way as recited in the claim, it cannot be said to prove prior invention of the thing claimed and, thus, cannot anticipate under 35 U.S.C. § 102.

*Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008).

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *See Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631–32 (Fed. Cir. 1987).

Inherency “may not be established by probabilities or possibilities. The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient.” *Cont'l Can Co. USA, Inc. v. Monsanto Co.*, 948 F.2d 1264, 1269 (Fed. Cir. 1991) (quoting *In re Oelrich*, 666 F.2d 578,

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<sup>2</sup> Appellants make a number of other arguments urging reversal of the rejections. We need not and do not address those arguments.

581 (CCPA 1981)). An inherent characteristic must be inevitable. *See Oelrich*, 666 F.2d at 581.

The Examiner contends that the process of Beck teaches the steps of: (1) measuring the current and voltage to determine actual motor torque ( $T_m$ ) (Ans. 2 (citing Beck 7:46–61; Fig. 3, box 36; 5:22–36; 7:11–14)) and (2) finding estimated, or expected, torque values for the pump ( $T_{me}$ ) (Ans. 2 (citing Beck 5:46–61; Fig. 3); *see also* Beck 7:46–61)). The Examiner further finds that Beck teaches that “[t]he torque and speed values can be correlated to fluid density through other process variables” (Ans. 2–3 (citing Beck 10:56–65)). According to the Examiner, this correlation allows one “to monitor average fluid density” (Ans. 3 (citing Beck 14:48–54)). In other words, the Examiner’s de facto position is that “Beck teaches [the step of] using expected and actual torque values to determine density” (Ans. 19).

On the other hand, Appellants argue that “Beck fails to expressly or inherently recite ‘using the expected torque and actual torque to determine an apparent density of the fluid’” (Appeal Br. 10). Appellants further argue that the Examiner’s reliance on Beck (*see* Ans. 2–3 (citing Beck 10:56–65)) is misplaced because “Beck never teaches calculating or measuring a fluid density to compare to a known reference fluid density” (Reply Br. 4). According to Appellants, “[t]he Examiner incorrectly interprets these sentences [in Beck 10:56–65] as teaching that the apparent fluid density can be determined based on an expected and actual torque” (*id.*).

The Examiner has not responded adequately to these arguments (Ans. 18–19), nor explained how Beck identically describes the claimed process within the meaning of § 102 such that it reasonably can be established that

Beck's use of  $T_m$  and  $T_{me}$  inevitably will determine an apparent density of the fluid (*id.*).

In light of these circumstances, we agree with Appellants that the Examiner has not satisfied the burden to establish that Beck's process expressly or inherently determines an apparent density of the fluid through use of the expected torque and actual torque as recited in claim 1. Although the Examiner argues that Beck's torque values "are not the only two values used in the calculation" to determine apparent density (Ans. 19), the Examiner has not provided any persuasive line of technical reasoning or evidence that the prior art process of Beck expressly discloses such a calculation or necessarily would have resulted in determination of apparent density as claimed (*see* Ans. 2–3, 18–19; Appeal Br. 10; Reply Br. 3–4).

The Examiner relies upon the same reasoning as set out for claim 1 for the § 103 rejections of claims 3, 4, and 6–20. With respect to these § 103(a) rejections, the Catalysts in Petroleum Refining, Hays, Takamatsu, and Cox references are not applied by the Examiner to correct the aforementioned deficiencies.

Thus, the Examiner's § 102(b) rejection is reversed as to claims 1, 2, and 5, and the Examiner's § 103(a) rejections are reversed as to claims 3, 4, and 6–20.

#### DECISION

The Examiner's decision is reversed.

#### ORDER

#### REVERSED