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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MARK S. FEDDEMA

Appeal 2019-002139
Application 13/923,437
Technology Center 1700

Before LINDA M. GAUDETTE, JEFFREY B. ROBERTSON, and
JANE E. INGLESE, *Administrative Patent Judges*.

INGLESE, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant¹ requests our review under 35 U.S.C. § 134(a) of the Examiner’s decision to finally reject claims 1–8 and 10–20. We have jurisdiction over this appeal under 35 U.S.C. § 6(b).

We AFFIRM IN PART.

CLAIMED SUBJECT MATTER

Appellant claims a method of operating a dishwasher having a tub at least partially defining a treating chamber, a spraying system for spraying liquid into the treating chamber, a recirculation system for recirculating liquid sprayed in the treating chamber to the spraying system, and a filter for

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies Whirlpool Corporation as the real party in interest. Appeal Brief filed June 21, 2018 (“Br.”), 2.

filtering the recirculated liquid. Br. 3–4, 6–9. Claim 1 illustrates the subject matter on appeal, and is reproduced below with contested language italicized:

1. A method of operating a dishwasher having a tub at least partially defining a treating chamber, a spraying system for spraying liquid into the treating chamber, a recirculation system for recirculating liquid sprayed in the treating chamber to the spraying system, and a filter for filtering the recirculated liquid, the method comprising:

recirculating a liquid through the treating chamber with the recirculation system;

selectively diverting, via a diverter assembly, a portion of the recirculating liquid to define both a first portion of the liquid and a second portion of the liquid;

bypassing the filter with the first portion of the liquid;

supplying the first portion of the liquid through the spraying system while the liquid is being recirculated;

supplying the second portion of the liquid through the filter while the liquid is being recirculated; and

varying an amount of the second portion of the liquid that is selectively diverted via the diverter assembly depending on at least one of a cycle parameter or a treatment condition parameter during the recirculating;

wherein the diverter assembly includes a rotatable valve element with multiple openings *and at least a portion of one of the openings of the multiple openings is fluidly coupled with the spraying system at all times so the supplying the first portion through the spraying system is continuous* and the filtered second portion is combined with the first portion and both are supplied to the spray system or the filtered second portion is combined with the liquid being recirculated prior to entering a pump of the recirculation system.

Br. 38 (Claims Appendix) (emphasis added).

REJECTIONS

The Examiner maintains the following rejections in the Examiner's Answer entered October 11, 2018 ("Ans."):

- I. Claims 1–5, 7, 8, and 10–20 under 35 U.S.C. § 103 as unpatentable over Fountain² in view of Ertle;³ and
- II. Claim 6 under 35 U.S.C. § 103 as unpatentable over Fountain in view of Ertle and Picardat.⁴

FACTUAL FINDINGS AND ANALYSIS

Upon consideration of the evidence relied upon in this appeal and each of Appellant's contentions, we affirm the Examiner's rejection of claims 1–5, 7, 8, and 10–20 under 35 U.S.C. § 103, for the reasons set forth in the Final Action, the Answer, and below, and reverse the Examiner's rejection of claim 6 under 35 U.S.C. § 103, for the reasons set forth in the Appeal Brief and below.

We review appealed rejections for reversible error based on the arguments and evidence the appellant provides for each issue the appellant identifies. 37 C.F.R. § 41.37(c)(1)(iv); *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential) (cited with approval in *In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011) (explaining that even if the Examiner had failed to make a prima facie case, "it has long been the Board's practice to require an applicant to identify the alleged error in the examiner's rejections"))).

² US 2012/0318296 A1; published December 20, 2012.

³ US 7,047,986 B2; issued May 23, 2006.

⁴ US 2006/0237052 A1; published October 26, 2006.

Rejection I: Claims 1–5, 7, 8, and 10–20 under 35 U.S.C. § 103
as unpatentable over Fountain in view of Ertle

Claims 1–5, 7, 8, 10, 11, and 13–16

Appellant argues claims 1–5, 7, 8, and 10, 11, and 13–15 together on the basis of claim 1. Br. 12–25. Although Appellant separately argues claim 16, Appellant addresses claim 16 by “incorporating by reference” the arguments that Appellant presents for claim 1. Br. 25–28. Appellant, therefore, effectively argues claim 16 together with claims 1–5, 7, 8, and 10, 11, and 13–15. We accordingly select claim 1 as representative of claims 1–5, 7, 8, and 10, 11, and 13–16, and decide the appeal as to claims 1–5, 7, 8, and 10, 11, and 13–16 based on claim 1 alone. 37 C.F.R. § 41.37(c)(1)(iv).

Claim 1 requires the recited method of operating a dishwasher having a spraying system for spraying liquid into a treating chamber to include recirculating a liquid through the treating chamber with a recirculation system, selectively diverting, via a diverter assembly, a portion of the recirculating liquid to define both a first portion of the liquid and a second portion of the liquid, supplying the first portion of the liquid through the spraying system, and supplying the second portion of the liquid through a filter. Claim 1 requires the diverter assembly to include a rotatable valve element with multiple openings, and requires at least a portion of one of the openings of the multiple openings to be fluidly coupled with the spraying system at all times, so that the first portion of the recirculating liquid is continuously supplied through the spraying system.

Fountain discloses dishwasher 10 including tub 18 defining treating chamber 20, spray system 28 for spraying wash liquid into treating chamber 20, and recirculation system 36 including recirculation pump 44 fluidly coupled to recirculation circuit 37, which recirculates liquid from treating

chamber 20 to spray system 28. Fountain ¶¶ 8, 10, 12–14; Fig. 1. Fountain discloses that recirculation circuit 37 includes supply port 62 extending upwardly from recirculation pump 44. Fountain ¶ 18; Figs. 1 and 2.

Fountain discloses that dishwasher 10 also includes filter system 52 fluidly coupled to recirculation system 36 and spray system 28. Fountain ¶ 18; Fig. 2. Fountain discloses that filter system 52 includes microfilter 64, ultrafilter 70 located downstream of microfilter 64, diversion circuit 72 including diverter valve 74, and return circuit 76 that fluidly couples an output side of ultrafilter 70 to recirculation circuit 37. Fountain ¶¶ 20, 22; Fig. 2. Fountain discloses that diverter valve 74 fluidly couples ultrafilter 70 to supply port 62 of recirculation pump 44 to control the amount of microfiltered liquid supplied to ultrafilter 70. Fountain ¶ 22; Fig. 2.

Fountain discloses that during operation, wash liquid collects in a lower portion of tub 18 after passing through spray system 28, and recirculation pump 44 causes the sprayed wash liquid to advance through microfilter 64 into inlet 66 of recirculation pump 44. Fountain ¶¶ 28, 29; Fig. 1. Fountain discloses that the microfiltered wash liquid exits recirculation pump 44 and moves through supply port 62, where a portion of the liquid is diverted into ultrafilter 70 by diverter valve 74, while the remaining portion of the liquid is recirculated through recirculation circuit 37 to spray system 28. Fountain ¶¶ 28, 29, 31; Figs. 1 and 2. Fountain discloses that the ultrafiltered wash liquid passes to recirculation circuit 37 through return circuit 76. Fountain ¶ 22; Fig. 2.

The Examiner finds that Fountain does not explicitly disclose that diverter valve 74 is “a rotatable valve element with multiple openings and at least a portion of one of the openings of the multiple openings is fluidly

coupled with the spraying system at all times,” so that a first portion of recirculated liquid is continuously supplied to the spraying system. Final Act. 3. The Examiner finds, however, that Ertle discloses that such a diverter “is known in the art.” *Id.*

More specifically, Ertle discloses a dishwashing machine including two spraying devices, and a movement reversal device that contains a rotatable positioning element (diverter valve) and at least two outlets for supplying liquid to each of the spraying devices. Ertle col. 1, ll. 18–30; col. 2, ll. 13–19; col. 6, ll. 47–48; Figs. 2–5D. Ertle discloses that liquid conveyed by a circulating pump flows through the movement reversal device, and the positioning element (diverter valve) opens or closes the two outlets to start or stop the flow of liquid to each spraying device. Ertle col. 1, ll. 23–30. Ertle discloses that the positioning element (diverter valve) can open both outlets continuously to simultaneously supply liquid to both spraying devices. Ertle col. 1, ll. 23–30; col. 3, ll. 26–31. Ertle discloses that one opening of the positioning element (diverter valve) has a different cross-section compared to the other opening, so that a lesser quantity of liquid can be conveyed to one of the spraying devices relative to the other spraying device. Ertle col. 2, ll. 50–55; col. 3, ll. 7–9.

In view of these disclosures in Ertle, the Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time of Appellant’s invention to substitute the diverter valve disclosed in Fountain with the diverter assembly disclosed in Ertle, to produce the predictable result of a diverter assembly in a dishwasher that diverts and varies the flow of dishwasher liquid between two supply lines. Final Act. 3–4; Ans. 4.

Appellant argues that the Examiner’s reasoning for making the

proposed combination of Fountain and Ertle is conclusory and “seems to have no rational underpinning” because the diverter valve disclosed in Fountain controls liquid to a secondary filter before it combines into a recirculation path, while Ertle’s rotatable positioning element (diverter) “is meant to alternately supply upper and lower spraying devices and change the flow rates through those devices.” Br. 20–21. Appellant argues that the Examiner’s proposed combination is, therefore, based on improper hindsight gleaned only from Appellant’s disclosure. Br. 22–23.

Appellant’s arguments are unpersuasive of reversible error in the Examiner’s rejection, however, for reasons that follow.

As discussed above, Fountain discloses recirculating wash liquid from tub 18 of treating chamber 20 to spray system 28 of Fountain’s dishwasher by pumping microfiltered wash liquid through recirculation pump 44 to supply port 62 of recirculation circuit 37. As also discussed above, Fountain discloses supplying part of the recirculated liquid to ultrafilter 70 using diverter valve 74 that fluidly couples ultrafilter 70 to supply port 62, and Fountain discloses that diverter valve 74 controls the amount of microfiltered liquid supplied to ultrafilter 70. Fountain does not describe diverter valve 74 in detail, disclosing only that the valve functions to convey a controlled portion of wash liquid passing through supply port 62 to ultrafilter 70, with the remaining portion of the wash liquid proceeding through recirculation circuit 37.

One of ordinary skill in the art seeking to find a suitable diverter valve to use in Fountain’s dishwasher reasonably would have been led to use a positioning element (diverter valve) as disclosed in Ertle, in view of Ertle’s disclosure that the positioning element (diverter valve) includes two

openings with different cross-sections that are each coupled to an outlet leading to a spraying device, and disclosure of continuously opening the two outlets with the positioning element (diverter valve) to simultaneously supply different amounts of liquid to each spraying device. One of ordinary skill in the art would have recognized that using such a positioning element (diverter valve) as disclosed in Ertle as diverter valve 74 in Fountain's dishwasher would allow an opening in the positioning element (diverter valve) to be coupled to an outlet leading to ultrafilter 70, and would allow a different-sized opening in the positioning element (diverter valve) to be coupled to an outlet leading to supply port 62 of recirculation circuit 37, permitting a controlled portion of wash liquid to be supplied to ultrafilter 70, with the remaining portion of the wash liquid being conveyed continuously through supply port 62 to recirculation circuit 37, as recited in claim 1. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007) (“[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.”).

Contrary to Appellant's argument, the Examiner's rationale for the proposed combination of Fountain and Ertle is, therefore, not based on impermissible hindsight, but, rather, is based upon the disclosures of Fountain and Ertle, taking into consideration the level of ordinary skill in the art at the time of Appellant's invention. *In re McLaughlin*, 443 F.2d 1392, 1395 (CCPA 1971) (A rejection does not rely on improper hindsight reconstruction so long as it “takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made

and does not include knowledge gleaned only from applicant's disclosure.").

Appellant argues that the Examiner's proposed combination of Fountain and Ertle "fails to reach the claimed invention" because Fountain "microfilters 100[%] of the recirculated liquid," while Ertle "merely teaches a valve with various sized openings that can allow outlets to upper or lower spray devices to have varying flow rates or that can hold the outlets closed." Br. 23–24 (emphasis omitted). Appellant argues that "[a]t best the combination teaches a first filter that filters all of the recirculated liquid, a second filter that filters some of the filtered liquid, and a valve between the two filters that allows for an opening that can be opened with a first flow rate, opened with a second flow rate, or closed." Br. 24.

Appellant's arguments are again unpersuasive of reversible error in the Examiner's rejection, however. As discussed above, Fountain discloses that sprayed wash liquid advances through microfilter 64 into inlet 66 of recirculation pump 44, exits recirculation pump 44 to supply port 62, and then diverter valve 74 diverts a portion of the liquid moving through supply port 62 into ultrafilter 70, while the remaining portion of the liquid recirculates to spray system 28 through recirculation circuit 37. Although Fountain's filter system 52 includes microfilter 64 that filters all of the sprayed wash liquid before it enters recirculation pump 44 as Appellant argues, Fountain's filter system 52 also includes ultrafilter 70, which filters only a *portion* of the microfiltered, sprayed wash liquid, as recited in claim 1. Due to the "comprising" transitional phrase recited in claim 1, the claim does not exclude additional method steps, such as a microfiltration step as disclosed in Fountain that occurs before diverter valve 74 diverts a portion of the microfiltered, sprayed wash liquid to ultrafilter 70. *Dow Chem. Co. v.*

Sumitomo Chem. Co., 257 F.3d 1364, 1380 (Fed. Cir. 2001) (“It is fundamental that the use of th[e] phrase [comprising] as a transitional phrase does not exclude additional unrecited elements, or steps (in the case of a method claim).”) (internal quotation marks omitted); *see also In re Affinity Labs of Tex., LLC*, 856 F.3d 902, 907 (Fed. Cir. 2017) (noting that use of the term “comprising” “signals that the breadth of [the method claim] allows for additional steps interleaved between the recited steps,” and that the Board did not err in concluding that the claim does not prohibit additional, intervening steps between those recited).

Contrary to Appellant’s arguments, the proposed combination of Fountain and Ertle would, therefore, “reach the claimed invention” because using a positioning element (diverter valve) as disclosed in Ertle having two different-sized openings each coupled to an outlet, as diverter valve 74 in Fountain’s dishwasher, would allow a controlled portion of microfiltered recirculated wash liquid to be supplied to ultrafilter 70 through one of the outlets, and would permit the remaining portion of the recirculated wash liquid to be continuously conveyed through the other outlet to recirculation circuit 37 and spray system 28, as recited in claim 1 (selectively diverting, via a diverter assembly, a portion of recirculating liquid to define both a first portion of the liquid and a second portion of the liquid, supplying the first portion of the liquid through the spraying system, and supplying the second portion of the liquid through a filter, the diverter assembly including a valve element with multiple openings, with at least a portion of one of the openings of the multiple openings fluidly coupled with the spraying system at all times, so that the first portion of the recirculating liquid is continuously supplied through the spraying system).

Appellant argues that the Examiner misconstrues Ertle because Ertle does not disclose that at least a portion of one of the openings of the multiple openings in Ertle's positioning element (diverter valve) is fluidly coupled with Ertle's spraying system at all times. Br. 18. Appellant argues that instead, Ertle "specifically teaches that all outlets of the positioning element can be closed," and also discloses that as the positioning element is rotated through various positions, it inherently closes both outlets based on its configuration. Br. 18–20.

Although Ertle does disclose that the positioning element (diverter valve) described in the reference can close both of the outlets in Ertle's movement reversal device, as the Examiner finds (Ans. 5), and as discussed above, Ertle also explicitly discloses that the positioning element (diverter valve) can open both outlets at the same time, to simultaneously and continuously supply liquid to two different spraying devices. Ertle col. 3, ll. 26–31. Because Appellant's arguments do not take this disclosure in Ertle into consideration, Appellant's arguments are unpersuasive of reversible error in the Examiner's rejection. *In re Mercier*, 515 F.2d 1161, 1165 (CCPA 1975) ("[A]ll of the relevant teachings of the cited references must be considered in determining what they fairly teach to one having ordinary skill in the art.").

Appellant argues that the Examiner's proposed combination of Fountain and Ertle "teaches away from the claimed invention because the base reference of Fountain . . . microfilters 100 percent of the recirculated liquid and the valving taught by Ertle . . . is intended to close off the outlets ports as it rotates through positions." Br. 24.

As discussed above, however, Fountain's filter system 52 includes

ultrafilter 70, which filters only a portion of the microfiltered, sprayed wash liquid, and Ertle discloses that the positioning element (diverter valve) described in the reference can open two outlets at the same time, to simultaneously and continuously supply liquid to two different spraying devices. Contrary to Appellant's arguments, the proposed combination of Fountain and Ertle, therefore, does not teach away from the method of claim 1. *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004) (“[t]he prior art’s mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed”).

We, accordingly, sustain the Examiner’s rejection of claims 1–5, 7, 8, 10, 11, and 13–16 under 35 U.S.C. § 103.

Claim 12

Claim 12 depends (indirectly) from claim 1 and recites that the amount of the second portion of the recirculated liquid (supplied through the filter) varies between 0% and 20% of the total amount of recirculated liquid.

As the Examiner finds, Fountain discloses that “the diverter valve 74 may be operated . . . such that 10–20% of the microfiltered wash liquid expelled by the recirculation pump 44 may be delivered to the ultrafilter 70.” Final Act. 5; *see also* Fountain ¶ 31.

Appellant argues that “the Examiner’s rejection does not provide any explanation for the deficiency from 0 to 10%, and offers no modification within the level of ordinary skill in the art that would overcome this seemingly fatal deficiency in the prior art cited against claim 12.” Br. 25.

It is well-established, however, that “[i]n cases involving overlapping ranges . . . even a slight overlap in range establishes a prima facie case of

obviousness.” *In re Peterson*, 315 F.3d 1325, 1329–330 (Fed. Cir. 2003). In such circumstances, an appellant must show that the claimed range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range. *In re Woodruff*, 919 F.2d 1575, 1578 (Fed. Cir. 1990) (indicating that in cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range).

On the record before us, Appellant does not argue, much less demonstrate, that supplying 0% to 20% of the total amount of recirculated liquid through a filter as recited in claim 12 achieves unexpected results relative to supplying 10–20% of recirculated liquid through ultrafilter 70, as disclosed in Fountain. Br. 25–28.

Appellant’s arguments are, therefore, unpersuasive of reversible error in the Examiner’s rejection of claim 12 under 35 U.S.C. § 103, which we accordingly sustain.

Claims 17, 18, and 20

Appellant argues claims 17, 18, and 20 together on the basis of independent claim 17, to which we accordingly limit our discussion. Br. 28–31.

Independent claim 17 recites a method of operating a dishwasher having a diverter assembly, and requires the diverter assembly to include a housing having a spray port in fluid communication with a spraying system and defining an inlet to the spraying system, and a filter port in fluid communication with a filter and defining an inlet to the filter.

To address the rejection of claim 17, Appellant first “incorporates by reference” arguments that Appellant presents for claim 1. Br. 28–31. These arguments, however, are unpersuasive of reversible error in the Examiner’s rejection of claim 17, for the same reasons that they are unpersuasive of reversible error in the Examiner’s rejection of claim 1, discussed above.

Appellant also argues that the proposed combination of Fountain and Ertle does not teach a diverter assembly including a housing having a spray port in fluid communication with a spraying system, and a filter port in fluid communication with a filter and defining an inlet to the filter, because the diverter valve disclosed in Fountain merely leads to an ultrafilter, while the positioning element (diverter valve) disclosed in Ertle merely leads to upper and lower sprayers. Br. 31. Appellant argues that the proposed combination of Fountain and Ertle also does not teach “supplying the remaining portion of the liquid from the sump directly to the spraying system while liquid is being filtered” as recited in claim 17 because Fountain “microfilters all of the liquid before spraying it” and Ertle “fails to overcome this deficiency.” Br. 31.

As the Examiner finds (Ans. 8–9), however, Figures 1 and 2 of Ertle show that positioning element 21, 21’ (diverter valve) is enclosed within a housing (that also includes flow heater 10) having outlets 14, 15 (ports) with outlet connections 12, 13. Using such a positioning element (diverter valve) enclosed in a housing and having two different-sized openings that are each coupled to an outlet (port), as disclosed in Ertle, as diverter valve 74 in Fountain’s dishwasher, would allow a portion of recirculated, microfiltered wash liquid to be supplied to ultrafilter 70 through one of the outlets (filter port in fluid communication with a filter and defining an inlet to the filter),

and would allow the remaining portion of the recirculated, microfiltered wash liquid to be continuously conveyed through the other outlet to recirculation circuit 37 and spray system 28 (spray port in fluid communication with a spraying system), as recited in claim 17. Similar to the situation discussed above for claim 1, claim 17 does not exclude a microfiltration step that occurs before the positioning element (diverter valve) of the proposed combination diverts a portion of the microfiltered, sprayed wash liquid to ultrafilter 70, due to the “comprising” transitional phrase recited in the claim.

Appellant’s arguments are, therefore, unpersuasive of reversible error in the Examiner’s rejection of claim 17. We, accordingly, sustain the Examiner’s rejection of claims 17, 18, and 20 under 35 U.S.C. § 103.

Claim 19

Claim 19 depends from claim 17 and recites that the spray port is centered on a rotational axis of the rotatable body so that at least one of the openings of the multiple openings is at least partially aligned with the spray port at all times, so that supplying the remaining portion to the spraying system is continuous.

Appellant argues that “[n]one of the prior art teaches nor makes obvious that the spray port is centered on a rotational axis of the rotatable body so that at least one of the openings of the multiple openings is at least partially aligned with the spray port at all times so the supplying the remaining portion to the spraying system is continuous.” Br. 33. Appellant argues that Ertle “does not continuously fluidly couple with the spraying system” because as the positioning element is rotated, closed portions of the element overlap the outlets to the different spray sections. Br. 32.

As discussed above, however, although Ertle discloses that the positioning element (diverter valve) disclosed in the reference can rotate to close both outlets in Ertle's movement reversal device (Figs. 4A–5D), Ertle also explicitly discloses that the positioning element (diverter valve) can open both outlets in the movement reversal device at the same time, to simultaneously and continuously supply liquid to two different spraying devices. Ertle col. 3, ll. 26–31.

Furthermore, the Examiner finds that although the proposed combination of Fountain and Ertle does not explicitly disclose that the outlet (spray port) in the positioning element (diverter valve), through which recirculated wash liquid passes to recirculation circuit 37 and spray system 28, is centered on a rotational axis of the positioning element (diverter valve), the position of the spray port “is a matter of design choice absent persuasive evidence that the particular configuration is significant.” Final Act. 9.

Appellant's arguments do not demonstrate that the location of the spray port recited in claim 19 is of any functional significance or serves a unique or critical purpose. Nor do Appellant's arguments demonstrate that the spray port location recited in claim 19 provides any unexpected result or advantage. Appellant's arguments are, therefore, unpersuasive of reversible error in the Examiner's finding that centering the outlet (spray port), through which recirculated wash liquid passes to recirculation circuit 37 and spray system 28, on a rotational axis of the positioning element (diverter valve) of the proposed combination would have been an obvious matter of design choice. *In re Kuhle*, 526 F.2d 553, 555 (CCPA 1975) (use of claimed feature solves no stated problem and presents no unexpected result and

“would be an obvious matter of design choice within the skill of the art”).

We, accordingly, sustain the Examiner’s rejection of claim 19 under 35 U.S.C. § 103.

Rejection II: Claim 6 under 35 U.S.C. § 103 as unpatentable over Fountain in view of Ertle and Picardat

Claim 6 depends from claim 5, which depends from claim 4, which depends from claim 1. Claim 1 recites supplying the second portion of the recirculating liquid through the filter, and varying an amount of the second portion of the liquid that is selectively diverted via the diverter assembly. Claim 4 recites that varying the amount of the second portion comprises controlling an opening in a conduit of the recirculation system that fluidly couples a sump of the dishwasher to the filter, claim 5 recites that controlling the opening in the conduit comprises varying the flow rate with a rotatable valve element, and claim 6 recites that varying the flow rate comprises varying the flow rate based on the temperature of the recirculated liquid.

Claim 6 thus requires varying the amount of the recirculated liquid that is selectively diverted to the filter based on the temperature of the recirculated liquid.

The Examiner finds that “the combination of Fountain and Ertle does not explicitly disclose varying the flow rate based on the temperature of the recirculated liquid.” Final Act. 10. The Examiner finds, however, that “Picardat discloses a similar filtering method wherein the flow rate to the filter is varied based on the temperature of the recirculated liquid.” Final Act. 10. (citing Picardat ¶ 63). The Examiner concludes that “[i]t would have been obvious to one of ordinary skill in the art at the time of filing to

modify Fountain and Ertle to include basing the varying of the flow rate based on the temperature of the recirculated liquid as disclosed by Picardat in order to allow the dishwasher to use less energy, water and time.” Final Act. 10. (citing Picardat ¶ 15).

Appellant argues that while Picardat discloses a filter in the paragraph cited by the Examiner (paragraph 63), and also discloses water temperature in this paragraph, “it in no way ties the two together.” Br. 36. Appellant argues that instead, Picardat discloses that water temperature is tied to the operation of the heating element, while a water valve that controls cleaning of the filter is based on the wash cycle and water level. Br. 36 (citing Picardat ¶ 63). The Examiner responds to Appellant’s arguments in the Answer by finding that “Picardat discloses that temperature sensors are used to measure the temperature and said measurements are used by the motor controller to control the motor speed.” Ans. 9.

On the record before us, however, the Examiner does not provide a sufficient factual basis to establish that the relied-upon portion of Picardat discloses or would have suggested varying the amount of recirculated liquid selectively diverted to a filter based on the temperature of the recirculated liquid, as required by claim 6.

Paragraph 62 of Picardat discloses inputting filter clogging status, water volume, wash water temperature, and user-selected cycle options to a dishwasher controller, and discloses that after evaluating these conditions, the dishwasher controller sends signals to adjust operation of the wash pump/motor (motor controller), filter cleaning diverter valve, water valve, heating element, drain pump, and detergent/rinse aid dispenser. Paragraph 63 of Picardat discloses that the signals sent to the motor controller control

the motor speed to (a) start and stop at the beginning and end of cycles; (b) start slowly as water is being added; (c) receive torque data from the motor, which is analyzed to determine if the pump is primed; and (d) stop, slow, and start the motor in response to filter clogging logic. Paragraph 63 also discloses that the “filter cleaning diverter valve can be opened and closed in order to dedicate more water to the filter cleaning jets,” and the “heating element can be operated on and off as directed by the wash cycle program and sensor inputs such as water temperature.”

Contrary to the Examiner’s assertion in the Answer, although paragraph 63 of Picardat discloses measuring wash water temperature, we find no disclosure in this paragraph of Picardat indicating that the motor controller uses the temperature of recirculated wash liquid to control the motor speed. The Examiner, therefore, does not provide sufficient technical reasoning, grounded in sound factual findings, to establish that the relied-upon disclosures in paragraph 63 of Picardat would have suggested varying the amount of recirculated liquid selectively diverted to a filter based on the temperature of the recirculated liquid, as required by claim 6.

We, accordingly, do not sustain the Examiner’s rejection of claim 6 under 35 U.S.C. § 103.

CONCLUSION

Claims Rejected	35 U.S.C. §	References/Basis	Affirmed	Reversed
1–5, 7, 8, 10–20	103	Fountain, Ertle	1–5, 7, 8, 10–20	
6	103	Fountain, Ertle, Picardat		6

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Claims Rejected	35 U.S.C. §	References/Basis	Affirmed	Reversed
Overall Outcome			1-5, 7, 8, 10-20	6

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED IN PART