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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TOYOTA MOTOR CORP. and AISIN SEIKI CO., LTD.,
Petitioner,

v.

INTELLECTUAL VENTURES II LLC,
Patent Owner.

Case IPR2017-01495
Patent 7,928,348 B2

Before KRISTEN L. DROESCH, JOHN A. HUDALLA, and AMANDA F. WIEKER, *Administrative Patent Judges*.

WIEKER, *Administrative Patent Judge*.

DECISION
Denying Patent Owner's Request for Rehearing
37 C.F.R. § 42.71(d)

I. INTRODUCTION

Intellectual Ventures II LLC ("Patent Owner") filed a Request for Rehearing (Paper 37, "Request" or "Req.") of our Final Written Decision (Paper 36, "Final Written Decision" or "Dec."), in which we determined that claims 24–27 of U.S. Patent No. 7,928,348 B1 (Ex. 1001, "the '348 patent") are unpatentable. Dec. 62. For the reasons that follow, Patent Owner's Request for Rehearing is denied.

II. THE REQUEST FOR REHEARING

In pertinent part, 37 C.F.R. § 42.71(d) states:

> The burden of showing a decision should be modified lies with the party challenging the decision. The request must specifically identify all matters the party believes the Board misapprehended or overlooked, and the place where each matter was previously addressed in a motion, an opposition, or a reply.

Thus, a request for rehearing is not an opportunity merely to disagree with the Board's assessment of the arguments or weighing of the evidence, or to present new arguments or evidence not presented previously.

Patent Owner requests rehearing to address two purported issues with our Final Written Decision: first, the Decision "present[s] an incorrect claim construction for the term 'pump'"; and, second, the Decision includes an "erroneous[] understanding that thermoplastics are a preferred material at high temperatures, making them preferable to thermosets for heat removal." Req. 2.

We have reviewed Patent Owner's Request and carefully considered the arguments presented. For the following reasons, we are not persuaded that we misapprehended or overlooked arguments or evidence, as asserted by Patent Owner.

III. DISCUSSION

1. "pump"

Dependent claim 26 recites the term "pump." Patent Owner argues that the Board erred in applying the term's plain and ordinary meaning in the Final Written Decision. Req. 2–4 (citing Dec. 60 (citing Ex. 3001 (defining "pump" as "a device that raises, transfers, or compresses fluids . . . esp. by suction or pressure or both"))). According to Patent Owner, our construction is "erroneously broad," fails to account for the language of the '348 claims and specification, and improperly relies upon extrinsic evidence. *Id.* at 7–11. Patent Owner argues that the '348 patent "use[s] the term 'pump' in the context of a device that is designed to propel a confined liquid using means other than gravity." *Id.* at 9. We have considered Patent Owner's arguments, but we are not persuaded that we misapprehended or overlooked any matter.

In pre-institution briefing, neither party proposed a claim construction of "pump." To the contrary, Patent Owner "submit[ted] that the Board should not, at this preliminary phase, construe claim terms that neither party has put into dispute." Prelim. Resp. 3. Thus, in response to Petitioner's undisputed contention that the combined teachings of Gould and Neal would have rendered claim 26 obvious to a person of ordinary skill in the art, we determined that Petitioner had established a reasonable expectation of success, and cited Gould as teaching "grinding and pumping[1] waste material

[1] Contrary to Patent Owner's assertion, Req. 3, we used the term "pump" when considering dependent claim 26. Dec. 18.

through impeller chamber 34 in lower housing 12." Dec. on Inst. 18 (citing, e.g., Ex. 1105, 2:7–28).

In its post-institution Response, Patent Owner argued that Gould does not disclose the claimed pump, because Gould does not use the term "pump," and because material flows through Gould's device via gravity, after being ground into sufficiently small pieces. PO Resp. 56–57 (citing Ex. 1132 ¶¶ 129, 142–145). Again, however, Patent Owner did not identify a construction of "pump," arguing that, "[c]ontrary to acting as a pump, which would push fluid through the device, a garbage grinder retards the flow of fluid and allows passage only after sufficient grinding has taken place." *Id.* at 56 (emphasis added).

Petitioner disputed Patent Owner's arguments about Gould's device in its Reply (*see* Pet. Reply 24–27), and during the oral hearing for this proceeding (*see* Tr. 60), to which Patent Owner did not respond. *See generally* Tr.

In our Final Written Decision, we noted that neither party proposed an express construction of "pump" during the course of trial. Dec. 60. Thus, we treated the term in accordance with its plain and ordinary meaning as "a device that raises, transfers, or compresses fluids . . . esp. by suction or pressure or both." *Id.* (citing Ex. 3001). Understanding a "pump" to be a device that transfers fluid is consistent with the term's usage in the specification, and is consistent with the parties' arguments during trial. *See* Ex. 1001, 2:19–20 (describing "pumps used for movement of corrosive agents"); 19:46–67 (describing "a water pump wherein the motor is used to heat water flowing through the pump"); 20:44–45 (explaining that "fluid transported by the pump can circulate through apertures formed in the

encapsulant"); Pet. 55 (describing Gould as grinding material and pumping it through an impeller chamber and out of a conduit); PO Resp. 56 (arguing that a pump "would push fluid through the device"); Pet. Reply 26 (arguing that "impeller 30 of Gould imparts a motion to the fluid to pump it through the fluid pathway"); Tr. 60 (Petitioner's counsel arguing that impeller 30 "is used to impel the fluid and waste through the pump," and "acts as a centrifugal pump and drives fluid out and down from the system").

We recognize Patent Owner's present argument that the construction we applied in the Decision is overly broad, when read in light of the intrinsic record, and that the "claims and written description consistently use the term 'pump' in the context of a device that is designed to propel a confined liquid using means other than gravity." Req. 7–10. Patent Owner, however, neither identifies where in the record it previously proposed a construction of "pump," nor identifies where in the record it previously discussed the evidence—intrinsic or extrinsic—that purportedly supports its present construction of this term. Because Patent Owner failed, during trial, to present specific argument or evidence about the proper construction of "pump," we will not consider this argument and evidence now, in a Request for Rehearing. 37 C.F.R. § 42.71(d).

2. Thermal conductivity

Patent Owner argues that, in the Final Written Decision, "the Board expressed the misunderstanding that thermoplastics are a preferred material at high temperatures, which the Board relied upon as motivation for modifying Zimmerman to use a thermoplastic in place of a thermoset." Req. 4. In other words, "[t]he Board found the challenged claims unpatentable in important part based on the understanding that

thermoplastics provide benefits at high temperatures due to their thermal conductivity." *Id.* at 11. Patent Owner argues that our understanding is not supported by Petitioner's contentions, nor the applied prior art. *Id.* at 4–7, 11–13 (citing, e.g., Dec. 31).

We have considered Patent Owner's arguments, but we are not persuaded that we misapprehended or overlooked any matter. Patent Owner misstates our findings of fact and conclusions of law. Patent Owner suggests that our conclusion of obviousness turns on the issue of whether thermoplastics enjoy high thermal conductivity *at high temperatures* (Req. 4, 11), however, we discussed "high temperature" only in response to Patent Owner's arguments (Dec. 31) and not as the basis for our conclusion of obviousness (*see, e.g., id.* at 21–25).

Beginning at page 21 of the Decision, we explained our findings that (1) Zimmerman teaches a monolithic body of chemically-activated epoxy resin, i.e., a thermoset (Dec. 23 (citing Ex. 2009 ¶ 98)), (2) Stephan discloses a pump housing made of either injection-molded thermoplastic or thermosetting material (*id.* at 21 (citing Ex. 1109 ¶¶ 22, 41)), and (3) Neal discloses a motor with a monolithic body made of either a temperature-activated material or a chemically-activated material (*id.* (citing Ex. 1104, 5:14–49)). As we stated in our Decision, "Neal discloses that the ability of a particular material to dissipate heat is a factor in material selection," and discloses thermoplastics as a suitable material. *Id.* (citing "[Ex. 1104,] 9:5–8; *see also id.* at 6:26–49 (identifying examples of thermoplastic resins having sufficient thermal conductivity), 17:53–55 (desire for high thermal

conductivity)").[2] We also noted that Neal discloses that injection-molded thermoplastic provides other benefits—it results in "longer tool life," "lower costs," and "less post mold machining," and it is "faster," utilizes "fewer parts," and is "modular in nature[,] . . . allow[ing] tooling to be easily customized." Ex. 1104, 21:24–45 (quoted at Dec. 24–25).

In light of these teachings, we concluded that a person of ordinary skill in the art would have found it obvious to make Zimmerman's monolithic body from injection-molded thermoplastic, as taught by Neal, to achieve heat conductivity and sealing—goals that Zimmerman also expressly sought to achieve—as well as the other benefits taught by Neal. Dec. 22–25; *see, e.g.*, *id.* at 24 ("Neal explains that using injection-molded thermoplastic as an encapsulating material allows for appropriate thermal conductivity, as well as hermetic sealing. These are the same properties sought to be realized by Zimmerman's epoxy resin sheath." (citing Ex. 1104, 6:26–46, 9:5–20, 18:4–10)). Moreover, as we recognized in our Decision, Stephan and Neal "explicitly teach that their housing and monolithic body, respectively, may be made from *either* a thermoset[, as taught by Zimmerman,] or an injection-molded thermoplastic material." *Id.* at 23 (emphasis added). Thus, we concluded that the use of injection-molded thermoplastic, as taught by Stephan and Neal, was a mere predictable substitution for the thermoset taught by Zimmerman. *Id.* at 25 (citing Ex. 1132 ¶¶ 78–79).

[2] Contrary to Patent Owner's suggestion, Req. 4–5, the Petition discussed benefits of high thermal conductivity, associated with the materials used for Neal's monolithic body. Pet. 28, 33 (citing Ex. 1104, 5:27–48, 6:26–59, 17:53–58, 18:4–10).

Contrary to Patent Owner's arguments (*see* Req. 4, 11), neither our findings of fact nor our conclusions of law depended upon an understanding that thermoplastics "are a preferred material at high temperatures." *See* Dec. 21–25. In support of its argument, Patent Owner cites to page 31 of the Decision. *See* Req. 12. There, we stated that "Patent Owner and Dr. Garris fail to account for other evidence of record that shows *thermoplastic materials to be beneficial at high temperature, due to their thermal conductivity*." Dec. 31 (emphasis added). Patent Owner takes issue with our usage of "at high temperature" in this statement, arguing that Neal does not discuss thermal conductivity at high temperatures, such that this understanding is insufficient to support our conclusion of obviousness. Req. 12. We are unpersuaded by Patent Owner's argument for two reasons.

First, as discussed above, Patent Owner is incorrect in characterizing this statement as the basis upon which "the Board relied . . . as motivation for modifying Zimmerman to use a thermoplastic in place of a thermoset." Req. 4; *see also id.* at 11. The basis for our obviousness conclusion, as summarized above, appears in pages 21–25 of the Decision. Rather, the cited statement was made in response to Patent Owner's argument that "[b]ecause thermoplastics lose their strength upon reheating, a POSITA will generally avoid using a thermoplastic material for a component in an engineering application that will expose the component to significant heating." Dec. 30–31 (quoting PO Resp. 13). Our usage of the phrase "high temperature" refers to Patent Owner's argument, and is not a characterization of some undescribed "high temperature" range at which high thermal conductivity exists.

Second, Neal explains that thermoplastics are preferred materials because of, *inter alia*, their high thermal conduction properties. Ex. 1104, 6:26–49; *see also id.* at 18:4–10 (sealing), 21:24–45 (other benefits). Neal also explains that thermoplastics "become molten at a temperature at which [they are] injection-moldable, and then will become *solid at normal operating temperatures* for the motor." *Id.* at 5:27–49 (emphasis added); *see also* Dec. 31 (citing Ex. 1104, 5:27–49). As we explained in the cited portion of the Decision, Patent Owner failed to show that the normal operating temperatures in the proposed combination would have been sufficiently high to be detrimental to thermoplastic. Dec. 30–31. For this reason, we did not agree with Patent Owner's argument (PO Resp. 13), and stated that "Patent Owner and Dr. Garris fail to account for other evidence of record that shows thermoplastic materials to be beneficial at high temperature"—i.e., at the "normal operating temperatures for the motor" (Ex. 1104, 5:42–44)—"due to their thermal conductivity." Dec. 31 (citing Ex. 1104, 5:42–44).

Thus, we are not persuaded that we misapprehended or overlooked any matter in reaching our conclusion that a person of ordinary skill in the art would have been motivated to modify Zimmerman's monolithic body to utilize injection-molded thermoplastic materials, as taught by Neal, as a mere predictable substitution of one known element for another, and to improve thermal conductivity and achieve other benefits, such as reduced manufacturing cost and increased manufacturing speed. *See* Dec. 21–25.

IV. CONCLUSION

We have reviewed and considered the arguments in Patent Owner's Request and conclude that Patent Owner has not carried its burden of demonstrating that the Board misapprehended or overlooked any matters in rendering the Final Written Decision, for the reasons discussed above. 37 C.F.R. § 42.71(d).

The Request for Rehearing is *denied*.

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