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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte PHILIP WAYNE MOCK

Appeal 2019-003089
Application 14/964,371
Technology Center 3600

Before MICHAEL L. HOELTER, WILLIAM A. CAPP, and
LISA M. GUIJT, *Administrative Patent Judges*.

CAPP, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Philip Wayne Mock (hereinafter “Appellant”)¹ seeks our review under 35 U.S.C. § 134(a) of the final rejection of claims 1–20 as unpatentable under 35 U.S.C. § 103(a) over Mock (US 2009/0173539 A1, pub. July 9, 2009)² and Fincher (US 2001/0045300 A1, pub. Nov. 29, 2001). We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the word “Appellant” to refer to “Applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies WWT North America Holdings, Inc. as the Applicant and real party in interest. Appeal Br. 1.

² The Mock reference is an earlier work of the inventor in the application under appeal.

THE INVENTION

Appellant's invention relates to anti-stall devices for oil field downhole use. Spec. ¶¶ 2–3. Claim 1, reproduced below, is illustrative of the subject matter on appeal.

1. A method of operating a bottom hole assembly in real-time including a drill pipe, an anti-stall tool, a motor and a drill bit comprising the steps of:

entering an upper torque threshold and a lower torque threshold as operating parameters for the bottom hole assembly into the a processor of anti-stall tool;

continuously sensing torque of the bottom hole assembly by a torque sensor in the bottom hole assembly;

electronically determining if the sensed torque has exceeded the upper torque threshold or drops below the lower torque threshold for a specified duration of time by the processor requiring intervention by the anti-stall tool; and

communicating motor sequence instructions from the processor to the anti-stall tool for proper hydro-mechanical adjustment of the anti-stall tool.

OPINION

Claims 1–12

Appellant argues claims 1–12 as a group. Appeal Br. 3–8. We select claim 1 as representative. *See* 37 C.F.R. § 41.37(c)(1)(iv).

The Examiner finds that Mock teaches the invention substantially as claimed except for electronic torque sensing and using a processor to control an anti-stall tool, for which the Examiner relies on Fincher. *See* Final Action 5–6. The Examiner concludes that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Mock by the teachings of Fincher to achieve the claimed invention. *Id.* at 6–7. According to the Examiner, a person of ordinary skill in the art

would have done this to facilitate changing operational limits and to avoid overcorrecting. *Id.* at 7.

Appellant argues that the proposed combination would not result in upper and lower thresholds as claimed. Appeal Br. 4. Appellant argues that the proposed combination “teaches away” from the claimed invention. *Id.*

Appellant argues that Fincher’s control system “constantly” adjusts force-on-bit during drilling operations. Appeal Br. 5. Appellant contrasts such with the controller of the instant invention which only sends instructions to the anti-stall tool when torque exceeds either an upper or lower threshold. *Id.* at 4. Appellant characterizes the foregoing as a “teaching away.” *Id.* However, teaching away requires “clear discouragement” from implementing a technical feature. *In re Ethicon, Inc.*, 844 F.3d 1344, 1351 (Fed. Cir. 2017). Appellant’s allegation, even if true, does not discourage pursuit of the claimed invention.

With respect to Appellant’s contention that the proposed combination does not result in upper and lower thresholds, the Examiner maintains that Fincher teaches thresholds as claimed. Ans. 7. The Examiner directs our attention to Fincher’s recital of “desired limits” of a number of parameters that are monitored by Fincher’s controller. *Id.*; Fincher ¶ 51.

In reply, Appellant argues that Fincher lacks any clear disclosure that its controller will stop intervening when parameters are within the boundaries of its allowed limits. Reply Br. 3.

Fincher expressly acknowledges the problem of a drill motor stalling in response to excess axial force on the drill bit (or “weight-on-bit”). Fincher ¶ 7. Fincher is directed to a bottom hole thruster that applies an axial force on the drill bit during drilling of a wellbore. *Id.*; Abstract.

Fincher discloses a sensor that provides measurements for determining a parameter of interest related to drilling the wellbore. *Id.* A processor that is responsive to the sensor controls the magnitude of the force generated by the thruster. *Id.*

The dispute between Appellant and the Examiner involves disparate interpretations of the teachings of the Fincher reference. Essentially, Appellant interprets Fincher's controller as constantly intervening with control signals to vary the magnitude of the force generated by the thruster. The Examiner, on the other hand, interprets Fincher's controlling as intervening only when necessary to maintain parameters within desired limits. Essentially, the Examiner interprets "desired limits" as a synonymous expression for having upper and lower thresholds.

Having considered the competing positions of Appellant and the Examiner, we find that Examiner's position more persuasive. We note the following disclosures from Fincher:

The thruster **501** of the present invention enables drilling of the wellbores by maintaining the desired parameters of interest within their limits.

Fincher ¶ 51.

The processor **810** continues to cause the thruster power unit **850** to adjust the applied force so as to maintain selected parameters *within their desired limits*.

Id. ¶ 57 (emphasis added).

[M]odels **812** provide the *ranges* or values of the selected parameters, such as the weight on bit, differential pressure across the mud motor, vibration, etc. The processor **810** adjusts the thruster force so as to maintain these parameters at their desired values.

Id. (emphasis added).

[I]f the mud motor pressure differential is outside the allowed limits, the thruster force is adjusted (within its own limits) *until the mud motor pressure is within the allowed limits.*

Id. (emphasis added).

[T]he processor causes the thruster to adjust the application of the force on the drill bit to maintain the parameter of interest *within a predetermined range.*

Id.; claim 5 (emphasis added).

[A] control unit controlling the operation of the power unit in response to a parameter of interest determined at least in part based on a measurement made in the wellbore during drilling of the wellbore to maintain the force on the drill bit *within a predetermined range.*

Id.; claim 12 (emphasis added).

In analyzing an obviousness rejection, we interpret the applied art from the vantage point of a person of ordinary skill in the art. What a reference teaches a person of ordinary skill is not limited to what a reference specifically “talks about” or what is specifically “mentioned” or “written” in the reference. *Syntex (U.S.A.) LLC v. Apotex, Inc.*, 407 F.3d 1371, 1380 (Fed. Cir. 2005). This follows, in part, because an artisan is presumed to know something about the art apart from what the references disclose. *See In re Jacoby*, 309 F.2d 513, 516 (CCPA 1962). Here, the subject matter of the invention deals with sensing and digital control circuitry for a mechanical device. The use of digital control circuitry has become ubiquitous in our technology driven economy. Practitioners are presumed to be familiar with problems that can arise if a processor is programmed to send intervention instructions to an apparatus if a sensed parameter deviates from a predetermined set value by of a minor amount. A correction initiated when the set value is exceeded on one side of the limit can then result in

exceeding the set value on the opposite side of the limit by a similar minor amount. Frequent and continuing repetition of this overcorrection cycle can cause undue wear and premature failure of the system. To prevent this occurrence, practitioners know to program a deadband about a predetermined value. A person of ordinary skill in the art reading Fincher is presumed to be familiar with using deadbands in a digital control system and would read and apply the teachings of Fincher regarding maintaining parameters within “desired limits” in view of such familiarity. Fincher ¶¶ 51, 57. In an obviousness analysis, we are required to read the prior art in context, taking account of, among other things, the background knowledge possessed by a person having ordinary skill. *Randall Mfg. v. Rea*, 733 F.3d 1355, 1362 (Fed. Cir. 2013). In following *Randall*, we agree with the Examiner that Fincher’s “desired limits” correspond to Appellant’s claimed “thresholds” as understood by the person of ordinary skill.

Finally, Appellant’s arguments concerning the lack of teaching, suggestion, or motivation to combine the prior art are without merit. Appeal Br. 4. The Examiner’s rejection contains explicit articulated reasoning supported by rational underpinning. Final Action 6–7; *see In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (requiring an obviousness conclusion to be based on explicit articulated reasoning with rational underpinning) *cited with approval in KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). The Examiner elaborated further on such reasoning in the Answer. Ans. 5–6. Appellant’s challenge to the Examiner’s position amounts to unsubstantiated attorney argument that is devoid of supporting evidence or persuasive technical reasoning. *Invitrogen Corp. v. Clontech Labs, Inc.*, 429 F.3d 1052,

1068 (Fed. Cir. 2005) (unsubstantiated attorney argument is no substitute for competent evidence).

It is well settled that any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed. *KSR*, 550 U.S. at 420. Appellant's Background section acknowledges a need in the industry for a self-contained, automatic feedback, real-time, downhole assembly that optimizes weight-on-bit to prevent downhole parameters from exceeding operational limitations. Spec. ¶ 13. Fincher solves this very need and does so approximately one decade before Appellant. The Examiner's reason for combining Fincher with Mock tracks closely to taking advantage of the improvements offered by Fincher. Final Action 6–7; Ans. 5–6. *See Dystar Textilfarben GmbH & Co. v. C.H. Patrick Co.*, 464 F.3d 1356, 1368 (Fed. Cir. 2006) (explaining that an implicit motivation to combine exists when the improvement is technology-independent and the combination of references results in a product that is more desirable).

In view of the foregoing discussion, we determine the Examiner's findings of fact are supported by a preponderance of the evidence and that the Examiner's legal conclusion of unpatentability is well-founded. Accordingly, we sustain the Examiner's unpatentability rejection of claims 1–12.

Claims 13–20

Claim 13 is an independent claim and claims 14–20 depend therefrom. Claims App. Appellant does not argue for the separate patentability of these claims apart from arguments presented with respect to claim 1, which we have previously considered. We sustain the Examiner's

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rejection of claims 13–20. *See* 37 C.F.R. § 41.37(c)(1)(iv) (failure to separately argue claims).

CONCLUSION

Claims Rejected	§	Reference(s)	Aff'd	Rev'd
1–20	103	Mock, Fincher	1–20	

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