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MCCOY RUSSELL LLP 806 S.W. BROADWAY, SUITE 600 PORTLAND, OR 97205			LAGUARDA, GONZALO	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte THOMAS G. LEONE and GOPICHANDRA SURNILLA

Appeal 2019-001472
Application 14/038,555
Technology Center 3700

Before MICHAEL C. ASTORINO, KENNETH G. SCHOPFER, and
BRADLEY B. BAYAT, *Administrative Patent Judges*.

ASTORINO, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), the Appellant¹ appeals from the Examiner's decision to reject claims 1–15. We have jurisdiction under 35 U.S.C. § 6(b). The Appellant's arguments were heard in an oral hearing held on September 11, 2020.

We REVERSE.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. The Appellant identifies the real party in interest as Ford Global Technologies, LLC. Appeal Br. 3.

STATEMENT OF THE CASE

Claimed Subject Matter

Claims 1 and 9 are the independent claims on appeal. Claim 1, reproduced below, is illustrative of the claimed subject matter.

1. A method for adjusting engine spark timing, comprising:
adjusting engine spark timing in response to an engine knock limited spark retard interpolated from a plurality of straight lines representing engine knock limited spark retard versus engine load relationships, the plurality of straight lines representing engine knock limited spark retard versus engine load relationships based on a plurality of mixtures of high and low octane fuels.

Appeal Br., Claims App.

Rejections²

Claims 1–10 and 12–15 are rejected under 35 U.S.C. § 103 as unpatentable over Fodale et al. (US 5,233,962, iss. Aug. 10, 1993) (“Fodale”).

Claim 11 is rejected under 35 U.S.C. § 103 as unpatentable over Fodale and Bromberg et al. (US 2008/0060627 A1, pub. Mar. 13, 2008) (“Bromberg”).

ANALYSIS

Method claims 1 and 9 recite a step of “adjusting engine spark timing in response to an engine knock limited spark retard.” Appeal Br., Claims App. Claims 1 and 9 also recite that “engine knock limited spark retard” is “interpolated” and “extrapolated,” respectively, “from a plurality of straight lines representing engine knock limited spark retard versus engine load

² The rejections of claims 1–15 under 35 U.S.C. § 112(b) are withdrawn. Ans. 2–3.

relationships, the plurality of straight lines representing engine knock limited spark retard versus engine load relationships based on a plurality of mixtures of high and low octane fuels.” *Id.*

For the latter of the above-recited claim limitations, the Examiner finds that Fodale at column 2, lines 1–5, “equates speed to load in terms of comparing it to knock conditions” and at column 3, lines 23–25, “equates the knock sensors to being indexed to speed or load.” Final Act. 3, 5 (emphasis omitted). From these findings, the Examiner determines that Fodale “is treating the engine speed as at least a matter of design choice to engine load and makes the two equivalent.” *Id.* (emphasis omitted).

The Appellant argues “that Fodale does not equate engine speed to engine load.” Appeal Br. 20 (citing Declaration under 37 C.F.R. § 1.132 from the inventor Thomas G. Leone). The Appellant points out “that Fodale states that the knock strategy retards spark advance under long term knock conditions for specific speed/load combinations.” Appeal Br. 22 (citing Fodale, col. 2, ll. 1–5). The Appellant submits that “Fodale’s use of the word ‘combinations’ is insightful here because it more likely than not indicates that spark advance under long term knock conditions of knock is retarded for engine speed/load pairs, not that engine speed may be substituted for engine load.” *Id.* Additionally, the Appellant argues that “where Fodale mentions speed/load together, Fodale fails to indicate that the two are equivalent” and therefore, the Examiner’s position concerning design choice is not supported. *See id.* at 22–23. The Appellant’s argument is persuasive.

The Examiner's response to the Appellant's argument is well-represented in the Answer at pages 9–10. The Examiner states, with added emphasis:

Engine load is disclosed in [Fodale] . . . in combination with the speed in col. 1, line 67 - col. 2, line 4: "A further advantage of the present invention is that the knock strategy retards the spark advance under long term (persistent) knock conditions for specific speed/load combinations as opposed to being universally applied across all speeds/loads." This disclosure shows that when this reference is tabulating data of spark vs speed this is in reference to its load which would be another column on this table of data which would allow a graph to be made as easily between spark vs load as spark vs. speed. *Not that one can substitute in for the other (speed and load are not the same) but that a graph representing one or the other can be easily made from the data being gathered from this reference.* But since this is an argument drawn to *the abstract part of the claim* as stated above and restated here: Ultimately this analysis no matter how accurate or improved from all prior art is simply a value that the system has to respond to and in responding the only requirement is that an adjustment be performed. This adjustment encompasses a range of values that include the values disclosed in the prior art. Any argument drawn to *the novelty of the abstract idea*, its accuracy and its improvement over the prior art doesn't change the fact that what is output to the non-abstract is simply an adjustment to spark timing in response to *the abstract idea* whose range of possible values for adjustment can be said to overlap the prior art. *This is why these claims have been rejected under USC 103 because they are understood to be equivalent.*

The Appellant explains that the Examiner's position confuses analysis under section 101 with section 103, and also confuses some overlapping, but distinct, concepts between the prior art and the claims with equivalence. *See generally* Appeal Br. 12–23; Reply Br., *passim*. We agree with the Appellant.

Additionally, the Examiner’s rejection includes the determination that “[i]t would have been obvious . . . to use load, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.” Final Act. 3, 5 (emphasis omitted) (citing *In re Boesch*, 617 F.2d 272 (CCPA 1980)).

The Appellant argues that the Examiner’s rejection fails to properly apply the holding of *In re Boesch*. Appeal Br. 23. The Appellant submits that “*In re Boesch* is directed to a determination of obviousness in matters where a range of values of a result effective variable is claimed,” whereas the Examiner’s determination replaces one variable for a completely different variable. *Id.* We agree with the Appellant’s argument. In this case, the Examiner’s application of the holding of *Boesch* is misplaced.

In view of the foregoing, we do not sustain the Examiner’s rejection of independent claims 1 and 9 and dependent claims 2–10 and 12–15. Further, the Examiner fails to rely on Bromberg in any manner that would remedy the deficiency in the Examiner’s rejection as discussed above. Thus, we do not sustain the Examiner’s rejection of dependent claim 11.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	References/Basis	Affirmed	Reversed
1–10, 12–15	103	Fodale		1–10, 12–15
11	103	Fodale, Bromberg		11
Overall Outcome				1–15

REVERSED