

NOTE: This disposition is nonprecedential.

**United States Court of Appeals  
for the Federal Circuit**

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**IN RE: LEROY G. HAGENBUCH,**  
*Appellant*

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2015-1476

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Appeal from the United States Patent and Trademark  
Office, Patent Trial and Appeal Board in No. IPR2013-  
00483.

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**IN RE: LEROY G. HAGENBUCH,**  
*Appellant*

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2015-1633

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Appeal from the United States Patent and Trademark  
Office, Patent Trial and Appeal Board in No. IPR2013-  
00638.

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**IN RE: LEROY G. HAGENBUCH,**  
*Appellant*

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2015-1745, 2015-1747

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Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2014-00123, IPR2014-00124.

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Decided: March 21, 2016

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JONATHAN HILL, Freeborn & Peters, LLP, Chicago, IL, for appellant. Also represented by DAVID TER MOLEN.

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Before PROST, *Chief Judge*, LOURIE and WALLACH, *Circuit Judges*.

LOURIE, *Circuit Judge*.

LeRoy G. Hagenbuch appeals from the final written decisions of the United States Patent and Trademark Office, Patent Trial and Appeal Board (“the Board”) cancelling all claims of U.S. Patent 8,014,917 (“the ’917 patent”) and claims 1–7, 10, 11, 15–20, 23, and 24 of U.S. Patent 8,532,867 (“the ’867 patent”) as unpatentable. *Toyota Motor Corp. v. Hagenbuch*, IPR2013-00483, Paper No. 37 (P.T.A.B. Dec. 5, 2014); *Toyota Motor Corp. v. Hagenbuch*, IPR2013-00638, Paper No. 42 (P.T.A.B. Jan. 30, 2015); *Toyota Motor Corp. v. Hagenbuch*, IPR2014-00123, Paper No. 32 (P.T.A.B. Mar. 3, 2015); *Toyota Motor Corp. v. Hagenbuch*, IPR2014-00124, Paper No. 36 (P.T.A.B. Mar. 3, 2015). Because the Board did not err in determining that the petitioner had shown by a preponderance of the evidence that the claims are unpatentable as obvious in view of the prior art, we *affirm*.

## BACKGROUND

Hagenbuch is the inventor and owner of the '917 and '867 patents, which are both directed to methods and apparatus for recording vehicular data during a collision (“event data recorder” or “EDR”) and automatically sending a wireless distress signal (“automatic collision notification” or “ACN”). The '867 patent is a continuation of the '917 patent. The claims recite a number of parameters to be recorded before and after detecting a collision, including “an RPM of the engine”; “a load on the engine”; “degree of braking”; and “an on/off status of a braking system [of the vehicle].” *See, e.g.*, '917 pat. col. 25 ll. 61, 65, 48–49, col. 26 l. 2.

Toyota Motor Corp. filed four *inter partes* review petitions, challenging all claims of both patents. As the issues relating to the patentability of the claims of both of these patents are essentially the same, we evaluate both of them here in one opinion and decision.

The Board instituted review of all claims of the '917 patent on the grounds of obviousness over Japanese Patent Publication H03-085412 (Apr. 10, 1991) (“Aoyanagi”) and one or more of International Patent Publication WO 90/03899 (Apr. 19, 1990) (“Vollmer”), U.S. Patent 4,939,652 (“Steiner”), and some other references. The Board also instituted review of all claims except claims 25 and 26 of the '867 patent, on the grounds of obviousness over Aoyanagi, Vollmer, and Steiner, and additionally over other references for certain claims not substantially at issue on appeal. Both patents expired after institution.

The Board first found that Aoyanagi teaches most of the limitations of the challenged claims. Specifically, the Board found the “detecting a collision of the vehicle in response to a sudden change in the velocity of the vehicle” limitation met by Aoyanagi’s use of “shock” and “vehicle speed becom[ing] zero in a short time” to determine that an accident occurred, and the engine-RPM limitation met

by Aoyanagi's disclosure of recording engine speed. The Board also found that brake on/off status is binary and therefore that Aoyanagi's recording of brake pedal position would indicate both degree of braking and on/off status. The Board further noted that the claims do not require separate sensors for on/off status and degree of braking.

The Board next found that Vollmer and another reference both teach automatically sending a wireless distress signal upon accident detection, and that one of skill would have been motivated to combine either reference with Aoyanagi, because the references are all directed to detecting collisions, even if they disclose different methods for doing so, and both references provide additional benefits.

Additionally, the Board found that Steiner teaches a dual-memory system that records vehicle parameters before and after detecting a collision. The Board found that Steiner's method for preserving data written in overwriteable memory (transferring to a second memory) was a known alternative to Aoyanagi's method (stopping recording) and thus would have been an obvious combination. The Board further found the engine-load limitation met by Steiner's disclosure of fuel consumption data recorded at fixed time intervals.

The Board also rejected Hagenbuch's evidence of commercial success for lack of nexus between Toyota's safety service subscription sales and the specific features claimed. The Board therefore concluded that Toyota had demonstrated, by a preponderance of the evidence, that all claims of the '917 patent and claims 1-7, 10, 11, 15-20, 23, and 24 of the '867 patent are unpatentable as obvious.

Hagenbuch timely appealed from the Board's final written decisions. Before oral argument, Toyota and Hagenbuch settled. Toyota was dismissed from the appeal, but Hagenbuch continues to seek relief from the

Board's final written decisions. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(4).

#### DISCUSSION

We review the Board's legal conclusions of obviousness *de novo*, and the Board's factual findings underlying those determinations for substantial evidence. *In re Baxter Int'l, Inc.*, 678 F.3d 1357, 1361 (Fed. Cir. 2012); *In re Gartside*, 203 F.3d 1305, 1315–16 (Fed. Cir. 2000).

Hagenbuch argues that Aoyanagi does not disclose the “detecting a collision of the vehicle in response to a sudden change in the velocity of the vehicle” limitation because it only detects an accident if the vehicle also completely stops, whereas the claimed system detects *all* crashes based on any sudden changes in velocity. Hagenbuch asserts that the claim language recites that the emergency signal must be sent upon sensing *any* crash, *i.e.*, all situations requiring an emergency response, but that the Board's unsupported interpretation narrows the detected crash conditions to match Aoyanagi's teachings. Hagenbuch also disputes the Board's equivalence of brake pedal position with brake on/off status; Aoyanagi does not inherently teach on/off, Hagenbuch contends, because pedal position can be low/medium/high and thereby not provide on/off data.

Hagenbuch further argues that the Board erred in ignoring the increased costs and higher failure risks associated with using Steiner's dual memory and transferring large amounts of data. Because Aoyanagi also teaches that recording all disclosed types of data is not necessary, Hagenbuch contends that the prior art teaches away from combining Steiner with Aoyanagi. Lastly, Hagenbuch argues, Toyota provided no reason to combine EDR and ACN in one device because the combination provides no improved functionality, and Toyota's successful sales of its safety subscription service are proof of the nonobviousness of the combination.

We agree with the Board that the few limitations not explicitly or inherently disclosed by Aoyanagi are taught by Vollmer and Steiner (and other prior art not significantly at issue on appeal), and we find that substantial evidence supports the Board's finding of a motivation to combine the art. We do not see error in the Board's interpretation of the collision-detection claim limitation, nor do we find fault with the Board's factual determinations regarding the teachings of the prior art. Substantial evidence also supports the Board's findings that one of skill in the art would have had a reasonable expectation of success in combining the prior art to obtain the claimed invention, regardless of commercialization concerns. Moreover, the Board did not err in finding that Hagenbuch's scanty evidence of commercial success was lacking a nexus to the claims and thus insufficient to show non-obviousness. The Board therefore did not err in concluding that the challenged claims would have been obvious to one of ordinary skill in the art in view of the prior art.

#### CONCLUSION

We have considered the remaining arguments and conclude that they are without merit. Because there was no error in the Board's determination that the petitioner met its burden in showing that all claims of the '917 patent and claims 1-7, 10, 11, 15-20, 23, and 24 of the '867 patent are unpatentable as obvious over the cited prior art of record, we affirm.

**AFFIRMED**