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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* FRANK BAEHRLE-MILLER, DIETER BLATTERT,  
and HUBERTUS WIENKEN

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Appeal 2015-000863  
Application 13/779,186  
Technology Center 3600

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Before WILLIAM A. CAPP, LEE L. STEPINA, and  
ARTHUR M. PESLAK, *Administrative Patent Judges*.

CAPP, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants seek our review under 35 U.S.C. § 134 of the final rejection of claims 1–14. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM-IN-PART.

### THE INVENTION

Appellants' invention relates to vehicle parking brakes. Spec. 1.  
Claim 1, reproduced below, is illustrative of the subject matter on appeal.

1. A method for providing a clamping force generated by a parking brake and a brake device, the method comprising:  
measuring a roadway incline; and  
performing, if the roadway incline exceeds a threshold value, a reengagement process for regenerating the clamping force after a defined time period has elapsed.

### THE REJECTIONS

The Examiner relies upon the following as evidence in support of the rejections:

Leiter	US 2006/0267402 A1	Nov. 30, 2006
Makishima	US 2007 /0029876 A1	Feb. 8, 2007
Jackson	US 2009/0198427 A1	Aug. 6, 2009
Sano	US 2010/0051395 A1	Mar. 4, 2010

The following rejections are before us for review:

1. Claim 7 is rejected under 35 U.S.C. § 112, first paragraph, for lack of written description support.
2. Claims 1–3, 6, 7, and 11 are rejected under 35 U.S.C. § 102(b) as being anticipated by Jackson.
3. Claims 4, 12, and 13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Jackson and Sano.
4. Claims 5 and 14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Jackson and Makishima.
5. Claims 8–10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Jackson and Leiter.

OPINION

*Written Description — Claim 7*

Claim 7 depends from claim 1. Claims App. The Examiner finds that the limitation in claim 7 — “*the time period, after which the reengagement process is performed*” — lacks antecedent basis. Final Action 2 (emphasis added). Appellants argue that the language “a defined time period” in claim 1 provides an antecedent basis for claim 7. Appeal Br. 4. We agree and, therefore, do not sustain the written description rejection of claim 7.

*Anticipation of  
Claims 1–3, 6, 7, and 11 by Jackson*

Appellants argue claims 1, 3, 6, 7, and 11 as a group. Appeal Br. 4. We select claim 1 as representative. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2015).

The Examiner finds that Jackson discloses all of the elements of claim 1. Final Action 2–3. In particular, the Examiner finds that Jackson performs a brake reengagement process after a defined time period. *Id.*

Appellants traverse the Examiner’s rejection by arguing that Jackson fails to disclose performing brake reengagement if the roadway incline exceeds a threshold value. Appeal Br. 4–6.

[T]he disclosure of Jackson does not suggest that the renewed application of the parking brakes is dependent on whether the roadway incline exceeds a threshold value.

*Id.* at 6. Appellants further contend that roadway incline threshold value is a “chosen” value requiring a determination of whether the roadway incline exceeds the chosen value. *Id.* Appellants contend that Jackson does not disclose such an evaluation. *Id.*

The Examiner responds that Jackson discloses a situation (high load) where a higher parking force is initially applied to the parking brake and

where the parking brake control unit may be programmed so that, after a predetermined period of time, it will signal the parking brakes to again provide a sufficiently high braking force to hold the vehicle. Ans. 5 (citing Jackson ¶¶ 127, 130, 131). According to the Examiner, this process includes an evaluation of roadway incline. *Id.* The Examiner concludes that, since this process includes evaluation of roadway incline, the claim limitation directed to the roadway incline exceeding a threshold value is satisfied. *Id.*

Jackson discloses an electromechanical parking brake system. Jackson ¶ 11. Jackson's system includes a module for determining an angle of incline upon which the vehicle is positioned. *Id.* ¶ 10. Jackson's system calculates a sufficient brake force to be applied based, among other things, on the vehicle's angle of incline. *Id.* ¶¶ 11, 82 ("steeper inclines require greater holding force from the parking brake"). Jackson's system may be programmed so that "after a predetermined period of time" parking brakes 168a and 168b are driven to provide a sufficiently high braking force to hold the vehicle. *Id.* ¶ 131. Thus, the Examiner's findings that Jackson discloses: (1) measuring a roadway incline, and (2) regenerating a clamping force after a defined time period are supported by a preponderance of the evidence.

With respect to the claim language — "*if the roadway exceeds a threshold value,*" we do not agree with Appellants' contention that claim 1 positively requires that an evaluation take place between an actual roadway incline condition and a "chosen" value to determine whether the roadway incline exceeds the chosen value. Independent claim 1 merely recites a conditional limitation in connection with the step of regenerating the clamping force, namely, the clamping force is regenerated — "*if the roadway incline exceeds a threshold value.*" Claims App.

During examination of a patent application, pending claims are given their broadest reasonable construction consistent with the specification. *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004).

"Construing claims broadly during prosecution is not unfair to the applicant . . . because the applicant has the opportunity to amend the claims to obtain more precise claim coverage." *Id.*

We construe the "performing . . . a reengagement process" limitation as optional since claim 1 does not require the clamping force to be regenerated if the roadway incline does not satisfy the claimed condition. *See Ex Parte Schulhauser*, No. 2013-007847 (PTAB April 28, 2016) (precedential); *see also Cybersettle, Inc. v. Nat'l Arbitration Forum, Inc.*, 243 Fed. Appx. 603, 607 (Fed. Cir. 2007) ("It is of course true that method steps may be contingent. If the condition for performing a contingent step is not satisfied, the performance recited by the step need not be carried out in order for the claimed method to be performed").<sup>1</sup> Therefore, because the regeneration of clamping force step is conditional on an event that may not occur, the step is optional and is not entitled to patentable weight. Accordingly, Appellants' argument that Jackson fails to disclose this step is not commensurate in scope with claim 1 and, consequently, does not persuade us of Examiner error.

We have considered Appellants' remaining arguments, including the arguments in the Reply Brief and find them to be without merit. Reply Br. 2–4.

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<sup>1</sup> MPEP § 2111.04 similarly provides that claim scope is not limited by claim language that suggests or makes optional but does not require steps to be performed.

In view of the foregoing, we sustain the Examiner's anticipation rejection of claims 1–3, 6, 7, and 11.

*Unpatentability of Claims 4, 12, and 13  
over Jackson and Sano*

Appellants argue claims 4, 12, and 13 as a group and request that we designate claim 4 as representative. Appeal Br. 7. We will treat claim 4 as representative.

Claim 4 is an independent claim that is substantially similar in scope with claim 1 except that it adds the following claim language: “wherein if the roadway incline does not exceed the threshold value, no reengagement process takes place. Claims App. The Examiner relies on Sano as teaching that a re-clamp operation is not performed unless needed. Final Action 4. The Examiner concludes that it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Jackson with Sano to achieve the claimed invention. *Id.* According to the Examiner, a person of ordinary skill in the art would have done this to omit the reengagement process where no additional braking force is needed. *Id.*

Appellants traverse the rejection by first arguing that Jackson fails to disclose regenerating the clamping force after a defined period of time — “*if the roadway incline exceeds a threshold value.*” Appeal Br. 7–9. Appellants also argue that Sano fails to satisfy the claim language in the “wherein” clause added to claim 4. *Id.* at 9–10.

In response, the Examiner reiterates that Jackson discloses that a reengagement process may be completed after a certain time period has elapsed. Ans. 6. The Examiner also states that Sano teaches that no

reengagement takes place if the temperature of the parking brake is high. *Id.* at 7.

Sano discloses an electric disk brake system. Sano, Abstract. Sano includes a control apparatus “C” that receives a plurality of sensory inputs including inclination of a vehicle. Sano ¶ 81. After a certain period of time has passed after actuating the parking brake, control for re-actuating the parking brake may be performed, “if necessary.” *Id.* ¶ 84; *see also* ¶ 108 (“determination whether the re-clamp operation should be performed”). The procedure for determining whether a re-clamp is necessary is illustrated in a flow-chart diagram. *Id.* ¶ 109, Fig. 10.

Referring to Sano, Figure 10, at step S104, a conduction current  $I_m$  of electric motor 16 is monitored. *Id.* If the conduction current  $I_m$  is less than a predetermined electric current, then it is determined that the re-clamp should be performed. *Id.* However, if the conduction current  $I_m$  is equal to or more than the predetermined electric current, then it is determined that the re-clamp is not necessary. *Id.*

In this way, since it is possible to detect a load of the electric motor 16, i.e., the brake force by monitoring the conduction current  $I_m$  of the electric motor 16, it can be determined whether the re-clamp operation should be performed.

*Id.* Sano explains that the control logic of Figure 10 regarding a determination of whether a re-clamp operation should be performed is executed by control apparatus C. *Id.* ¶ 108. Control apparatus C, in turn, receives input as to the inclination of the vehicle. *Id.* ¶ 81. This evidence is sufficient to support, by a preponderance of the evidence, the Examiner’s finding that the combination of Jackson and Sano discloses the subject matter of claim 4.

We have considered Appellants' other arguments including those from the Reply Brief and find them to be without merit. Reply Br. 4–5. Otherwise, we determine that the Examiner's rationale for combining Jackson and Sano, omitting re-engagement where unnecessary, reflects sufficient articulated reasoning with a rational underpinning. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007); Final Action 4.

Accordingly, we sustain the rejection of claims 4, 12, and 13.

*Unpatentability of Claims 8–10  
over Jackson and Leiter*

Appellants do not argue for the separate patentability of claims 8–10 apart from arguments presented with respect to claim 1, which we have previously considered. We sustain the rejection of claims 8–10. 37 C.F.R. § 41.37(c)(1)(iv) (2015).

*Unpatentability of Claims 5 and 14  
over Jackson and Makishima*

*Claim 5*

Claim 5 depends from claim 1 and adds the limitation, “wherein the roadway incline is differentiated between at least three gradient ranges, a reengagement process being performed in the upper gradient ranges.” Claims App. In traversing the rejection, Appellants rely solely on arguments that we have fully considered and found unpersuasive with respect to claim 1. Accordingly, we sustain the rejection of claim 5. 37 C.F.R. § 41.37(c)(1)(iv).

*Claim 14*

Claim 14 is an independent claim that is similar in scope to claim 1 except that it also requires that the roadway incline is categorized into one of

three distinct gradient ranges and selectively performs control operations of the parking brake where a *time period for monitoring* an unintended movement of the vehicle varies for the gradient ranges. Claims App.

The Examiner finds that Jackson monitors unintended movement of a vehicle. Final Action 6 (citing Jackson ¶¶ 131, 135–137). The Examiner relies on Makishima as categorizing a roadway incline into one of three distinct gradient ranges and performing a different braking control operation based on the gradient range. *Id.* 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 achieve the claimed invention by combining the teachings of the prior art. *Id.* According to the Examiner, a person of ordinary skill in the art would have done this to determine the specific braking force required at each incline angle. *Id.*

Appellants argue that the Examiner’s proposed combination fails to suggest *varied time periods for monitoring* unintended movement of the vehicle as claimed. Appeal Br. 11. Appellants argue that Jackson monitors for a roll-away condition indefinitely. *Id.* Appellants conclude, therefore, that the prior art does not suggest varying the respective time periods for monitoring unintended movement for different incline gradients. *Id.*

In response, the Examiner states that Jackson discloses a method where the incline is differentiated between different gradient ranges. Ans. 8. The Examiner states that Makishima teaches distinguishing between three distinct gradient ranges. *Id.* 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 program a reengagement process as disclosed by Jackson with the three different gradient ranges as taught by Makishima. *Id.* According

to the Examiner, a person of ordinary skill in the art would have done this to achieve finer control over the braking force applied by the parking brake.

*Id.*

In reply, Appellants argue that the Examiner's Answer fails to address the claim limitation directed to *varying a monitoring time period* with respect to each of three distinct gradient ranges. Reply Br. 6.

Makishima is directed to an electric parking brake system. Makishima, Abstract. Makishima discloses that it is well known to incorporate an inclination sensor into a braking system. *Id.* ¶ 7. It further discloses that it is known to set a braking force dependent on the output value of an inclination sensor to avoid the creeping of a vehicle parked on an inclined road. *Id.* ¶ 8. The inclination sensor 44 works as the vehicle condition detecting section for deciding the braking force of the parking brake 10. *Id.* ¶ 51. Makishima's system compares the output of inclination sensors to predetermined values of 10 percent, 15 percent, and 20 percent respectively. *Id.* ¶¶ 66–73. A target braking force is selected from a plurality of predetermined values in accordance with inclination sensor value N. *Id.* ¶ 79.

Jackson discloses a safeguard against vehicle rollaway. Jackson ¶ 136. Jackson's EPB-ECU 164 monitors wheel speed sensors mounted on the wheels of the vehicle to detect unexpected pulses. *Id.* The system is configured to detect a single pulse from the wheel sensors to enable the system to react sufficiently quickly to a roll-away situation. *Id.* Jackson's system does this since the vehicle may otherwise have too much momentum to stop the roll-away by reapplication of the service brake. *Id.* Jackson's ABS/EBS system is either kept in operation after parking or is reactivated in

the critical time for roll away. *Id.* ¶ 137. The ABS/EBS system is configured to wake up the EPB-ECU for re-clamping. *Id.*

After reviewing Jackson and Makishima's respective disclosures, we agree with Appellants that the prior art, alone or in combination, does not disclose distinct "monitoring periods" for each of three incline gradient ranges. Moreover, the Examiner makes no factual findings and offers no conclusions that it would have been obvious to modify the proposed combination of Jackson and Makishima to provide for distinct monitoring periods.

In view of the foregoing, we do not sustain the Examiner's unpatentability rejection of claim 14.

#### DECISION

The decision of the Examiner to reject claims 1–13 is affirmed.

The decision of the Examiner to reject claim 14 is reversed.

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