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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte RICHARD D. RIDENOUR

Appeal 2015-002555
Application 12/535,208
Technology Center 3600

Before JENNIFER D. BAHR, EDWARD A. BROWN, and SEAN P. O'HANLON, *Administrative Patent Judges*.

BROWN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Richard D. Ridenour (Appellant) appeals under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 22–43.[1,2] We have jurisdiction in this appeal under 35 U.S.C. § 6(b).

We REVERSE.

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[1] On June 17, 2014, Appellant submitted a Response to Notification of Non-Compliant Appeal Brief to provide a corrected Claims Appendix. In deciding this appeal, we consider the claims set forth in the corrected Claims Appendix. In this decision, any references to the "Appeal Brief" or "Appeal Br." are to the Appeal Brief filed on April 9, 2014, and any references to the "Claims Appendix" or "Claims App." are to the corrected Claims Appendix.

[2] Claims 1–21 are withdrawn from consideration. Br. 1–4 (Claims App.).

INVENTION

Appellant's disclosure "relates to systems and methods for conflict detection using position uncertainty, and, in particular, to safety alerting for vehicles, such as aircraft, using position uncertainty." Spec. ¶ 2. Claim 22, reproduced below, is the only independent claim on appeal.

> 22. A system comprising:
> (a) a processor; and
> (b) a memory in communication with the processor and storing instructions that, when executed by the processor, cause the processor to:
> (i) calculate, based on a reported position of a vehicle, a probability that an actual position of the vehicle is within a region of interest;
> (ii) determine whether a threat of a collision exists between the vehicle and an object based on:
> (1) the probability that the actual position of the vehicle is within the region of interest; and
> (2) a reported position of the object; and
> (iii) generate an alert if it is determined a threat of a collision exists between the vehicle and the object.

Appeal Br. 5 (Claims App.).

REJECTIONS

Claims 22–39 and 41–43 are rejected under 35 U.S.C. § 102(b) as anticipated by Simon (US 2006/0041381 A1, pub. Feb. 23, 2006).[3]

[3] Although the heading of the rejection in the Final Office Action indicates claims "22–39, 42–23" are subject to this ground (Final Act. 2), the Examiner addresses claims 22–39 and 41–43 in the explanation of the rejection (*id.* at 2–6). In the Examiner's Answer, the Examiner indicates that the rejection pertains to claims 22–39 and 41–43. Ans. 2. Accordingly, we will treat the rejection as applying to claims 22–39 and 41–43. This is consistent with Appellant's understanding. *See* Appeal Br. 2, n. 1.

Claim 40 is rejected under 35 U.S.C. § 103(a) as unpatentable over Simon and Frazier (US 2002/0154061 A1, pub. Oct. 24, 2002).

ANALYSIS

Anticipation of claims 22–39 and 41–43 by Simon

As to claim 22, the Examiner finds that Simon discloses, *inter alia*, a memory that causes a processor to "calculate, based on a reported position of a vehicle, a probability that an actual position of the vehicle is within a region of interest." Final Act 2, citing Simon ¶¶ 3, 22. The Examiner references the description in paragraph 3 of Simon that "[an] accident risk is then derived therefrom. The 'hazard probability' is understood here as a probability of at least a near miss; this means that a region is drawn around the own object, and the probability that other objects might enter that region around the own object is calculated." *Id.* (bolding omitted).

Appellant contends that paragraph 3 of Simon does not disclose the claim limitation of "calculat[ing], based on a reported position of a vehicle, a probability that an actual position of the vehicle is within a region of interest." Appeal Br. 4–5. Appellant contends that this paragraph does not further disclose how the "hazard probability" region is determined, but paragraph 4 of Simon makes clear that this region does not disclose the claimed "calculating" limitation. *Id.* at 5. Rather, Appellant contends, Simon uses object types and a predefined dynamic vehicle model to determine the "hazard probability" and its related region encompassing the own object. *Id.*

We agree with Appellant that paragraph 3 of Simon does not disclose the claimed "calculating" limitation. The Examiner responds that Simon's system takes into account the position of the own object (vehicle) and other

objects in the area to determine a collision probability and hazard probability and determine a threat of a collision. Ans. 3. Accordingly, the Examiner's position is that the "own object" described in Simon corresponds to the claimed "vehicle." The Examiner references Figure 5 of Simon, and finds that Simon determines if own object 48 (vehicle) and other object 49 are within a "close proximity defining region of interest" by convolution of own object 48 with other object 49 to get region of interest 50. *Id.* The Examiner determines that Figure 5 shows that own object 48 is within region of interest 50. *Id.*

Figure 5 of Simon shows a model for determining hazard probability and appears to provide an example of the method described generally in paragraph 3. *See* Simon ¶ 18. Paragraph 48 of Simon describes Figure 5 as follows:

> **FIG. 5** shows schematically, from a bird's-eye perspective, how the collision probability can be determined. *Own object **48** is here convoluted with second object **49**, so that region **50** is created in the coordinate system of the own object.* This involves placing the own object with its reference point "+" at the origin, and disposing second object **49** in multiple fashion around own object **48** in such a way that contact just occurs between objects **48** and **49**. In multiple assemblage **51**, reference point "x" of the second object describes a contour that represents the outline (edge) of region **50**. *This is the region that is taken into consideration for the collision probability. This region must be checked as to whether, at a future point in time, reference point "x" of the second object will be located within it. If so, this corresponds to a collision. If such is not the case, then a collision does not exist.*

(Emphases added.)

Paragraph 48 does not disclose "calculate[ing], based on a reported position of a vehicle [own object 48], a probability that an actual position of

the vehicle [own object 48] is within a region of interest," as called for by claim 22. Region 50 is created by placing own object 48 with its reference point "+" at the origin, and disposing second object 49 at different positions around own object 48. *Id.* Reference point "x" appears to be based on the "current status of the own object." *See* Simon ¶¶ 3, 4. Even assuming region 50 corresponds to the claimed "region of interest," Simon does not disclose calculating, based on a reported position of own object 48, *a probability* that an *actual position* of own object 48 is within region 50. Rather, the probability that Simon discloses calculating is of second object 49 entering region 50, based on whether reference point "x" of second object 49 will be located within region 50. *See* Simon ¶¶ 3, 48.

The Examiner finds that paragraph 3 of Simon also discloses the claim limitations of "determin[ing] whether a threat of a collision exists between the vehicle and an object based on: (1) the probability that the actual position of the vehicle is within the region of interest." Final Act. 2–3. However, because paragraph 3 of Simon does not disclose the "calculating" limitation, it, accordingly, also does not disclose the "determining" limitation. The Examiner also finds that Figure 5 of Simon shows there is a threat of collision between the own object and the other object. Ans. 4. We understand, however, that the own object is always within region 50 because this region is created, based on the own object position, to surround the own object. The Examiner has also not demonstrated that Figure 5 of Simon and the related description discloses the calculating limitation (i). Consequently, the Examiner has not established by a preponderance of the evidence that Simon discloses all limitations of claim 22.

For the above reasons, we do not sustain the rejection of claim 22, and claims 23–39, and 41–43 depending therefrom, as anticipated by Simon.

Obviousness of claim 40 over Simon and Frazier

The Examiner's application of Frazier to the rejection of dependent claim 40 does not cure the deficiencies of the rejection of claim 22, and we do not sustain the rejection of claim 40 as unpatentable over Simon and Frazier.

DECISION

We reverse the Examiner's decision to reject claims 22–43.

REVERSED