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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte RICHARD DARRELL RIDENOUR II

Appeal 2014-007528¹
Application 12/041,868²
Technology Center 3600

Before MURRIEL E. CRAWFORD, TARA L. HUTCHINGS, and
MATTHEW S. MEYERS, *Administrative Patent Judges*.

MEYERS, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner's Final rejection of claims 1, 3–8, 10–14, and 16–20. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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1. Our decision references Appellant's Appeal Brief ("Appeal Br.," filed April 22, 2013) and Reply Brief ("Reply Br.," filed July 21, 2014), the Examiner's Supplemental Answer ("Ans.," mailed May 20, 2014), and Final Office Action ("Final Act.," mailed March 21, 2012).
 2. Appellant identifies Aviation Communication & Surveillance Systems LLC, as the real party in interest (Appeal Br. 2).

CLAIMED INVENTION

Appellant's claimed invention relates generally "to systems and methods for terrain warning suppression using flight plan information" (Spec. ¶ 2).

Claims 1, 8, and 13 are the independent claims on appeal. Claim 1, reproduced below, is illustrative of the subject matter on appeal:

1. A method comprising:
 - determining, with a processor, if terrain presents a hazard to an aircraft based on a current position of the aircraft and an intended flight plan for the aircraft; and
 - providing an alert if it is determined that the terrain presents a hazard to the aircraft;wherein determining if the terrain presents a hazard to the aircraft further includes at least one of:
 - determining if the current position of the aircraft is within any of one or more boundaries, each boundary surrounding at least a portion of the intended flight plan; and
 - determining if the terrain is within the one or more boundaries.

REJECTIONS

Claims 1, 8, 13, and 14 are rejected under 35 U.S.C. § 102(b) as anticipated by Muller (US 2003/0184450 A1, pub. Oct. 2, 2003).

Claims 3–7, 10–12, and 16–20 are rejected under 35 U.S.C. § 103(a) as unpatentable over Muller and Ishihara (US 6,707,394 B2, iss. Mar. 16, 2004).

ANALYSIS

Independent claims 1, 8, 13, and dependent claim 14

We are persuaded by Appellant’s argument that the Examiner erred in rejecting independent claim 1 under 35 U.S.C. § 102(b) because Muller fails to disclose

wherein determining if the terrain presents a hazard to the aircraft further includes at least one of:

determining if the current position of the aircraft is within any of one or more boundaries, each boundary surrounding at least a portion of the intended flight plan; and

determining if the terrain is within the one or more boundaries

(*See* Appeal Br. 6–10; *see also* Reply Br. 3–5). The Examiner cites paragraphs 110 and 174 of Muller as disclosing the argued limitations (*see* Final Act. 4; *see also* Ans. 2–3 and 8–9). However, we agree with Appellant that there is nothing in the cited portions that discloses “determining if the terrain presents a hazard to the aircraft further,” as required by independent claim 1.

Muller is directed to

a terrain awareness system (TAS) and more particularly to a system for alerting a pilot of an aircraft of a dangerous flight condition which monitors the position as well as the trajectory of an aircraft based upon a satellite-based navigation system, such as a global positioning system (GPS), to provide a LOOK-AHEAD/ LOOK-DOWN as well as LOOK-UP terrain advisory and warning indications based upon stored terrain data which provides relatively longer warning times than known ground proximity warning system while minimizing nuisance warnings.

(Muller ¶ 3). Muller discloses that “current longitude and latitude of the aircraft from the GPS **22** are applied to an Airport and Terrain Search Algorithm, indicated by a block **29**, which includes location search logic for

determining the terrain data, as well as the airport data surrounding the aircraft” (*id.* ¶ 61). Muller further discloses that “GPS inputs, along with terrain and airport data surrounding the aircraft from the search algorithm, indicated by the block **29**, are applied to the LOOK-AHEAD warning generator **30**, which provides both terrain advisory and terrain warning signals based upon the position and projected flight path of the aircraft” (*id.*).

In this regard, Muller discloses that “[t]he terrain floor relates to a distance ΔH below the aircraft” (*id.* ¶ 101). Muller also discloses that “terrain advisory boundaries are based upon the relationship between the flight path angle γ and a first configurable datum, THETA1” (*id.* ¶ 105) and “[i]f the flight path angle γ is greater than THETA1[,], then different terrain advisory boundaries are provided” (*id.* ¶ 107). Muller further discloses that its terrain warning boundaries “indicate to the pilot of an aircraft conditions when evasive action is required to avoid terrain contact” (*id.* ¶ 110). More particularly, Muller discloses that

terrain warning boundaries are based on the relationship of the flight path angle of the aircraft relative to a second configurable datum, THETA2. The datum THETA2 may be selected with an upslope of, for example, 6° , which is equal to the average climb capability of airliners. The datum THETA2 could be modified, taking into consideration aircraft type, configuration, altitude and time for takeoff. However, because of the longer LOOK-AHEAD distance as discussed above for the terrain warning boundaries, a terrain warning could occur before a terrain advisory indication for extreme terrain conditions.

(*Id.*). Muller also discloses a display system which “provide[s] a visual indication of the terrain advisory and terrain warning indications discussed above as a function of the current position of the aircraft. Background

terrain information is also provided which provides an indication of significant terrain relative to the current position of the aircraft” (*id.* ¶ 174).

We have reviewed the cited portions of Muller and agree with Appellant that Muller fails to disclose the argued limitations. More particularly, we agree with Appellant that independent claim 1 does “not merely recite a ‘flight path’ but an ‘intended flight plan.’ While the datum of *Muller et al.* may be a ‘function of the flight path,’ it is not a function of an ‘**intended flight plan**,’ which is what is claimed.” (Reply Br. 4). Thus, we fail to see, and the Examiner does not adequately explain, how Muller’s disclosure that its display system “provide[s] a visual indication of the terrain advisory and terrain warning indications discussed above as a function of the current position of the aircraft” (Muller ¶ 174 (emphasis added)) discloses “determining . . . if terrain presents a hazard to an aircraft based on a current position of the aircraft and an intended flight plan for the aircraft” much less doing so by “at least one of: determining if the current position of the aircraft is within any of one or more boundaries, each boundary surrounding at least a portion of the intended flight plan; and determining if the terrain is within the one or more boundaries,” as independent claim 1 further requires.

Responding to Appellant’s argument in the Response to Argument section of the Answer, the Examiner takes the position that

as Appellant has not provided a special definition for the term surrounding at least a portion of a flight plan, thus the broadest reasonable interpretation is utilized. Examiner defines surround as “to be on every side of (someone or something)” therefore the broadest reasonable interpretation of “surrounding at least a portion” includes vector that is a function of the flight path. Therefore the configurable datum as in paragraph [0110]

partially surround the flight path. *Muller* additionally teaches that terrain warning boundaries indicates evasive action required to avoid terrain contact (paragraph [0110]).

(Ans. 10).

The difficulty with the Examiner's finding, as Appellant points out, is that independent claim 1 "recites 'each boundary surrounding at least a portion of the **intended** flight plan'" (Reply Br. 5). In contrast, *Muller* discloses that its "terrain advisory and terrain warning signals [are] based upon the position and projected flight path of the aircraft", neither of which addresses a "boundary surrounding at least a portion of the intended flight plan", as independent claim 1 requires (*Muller* ¶ 61; *see also id.* ¶ 174 (emphasis added)). As such, we agree with Appellant that *Muller* fails to disclose the argued limitations of independent claim 1.

In view of the foregoing, we do not sustain the Examiner's rejection of independent claim 1 under 35 U.S.C. § 102(b).

Independent claims 8 and 13

Independent claims 8 and 13 include a limitation similar to limitation [d] in independent claim 1, and are rejected based on the same rationale applied with respect to independent claim 1 (*see* Final Act. 4–5). Thus, for the same reasons, we also do not sustain the Examiner's rejection of independent claims 8 and 13, and claim 14 which depends from independent claim 13, under 35 U.S.C. § 102(b).

Appeal 2014-007528
Application 12/041,868

*Claims 3–7, 10–12, and 16–20 are rejected as obvious over
Muller and Ishihara*

Claims 3–7, 10–12, and 16–20 depend from independent claims 1, 8, and 13, respectively. The Examiner’s rejection of claims 3–7, 10–12, and 16–20 under 35 U.S.C. § 103(a) based on Ishihara, in combination with Muller, does not cure the deficiency in the Examiner’s rejection of independent claims 1, 8, and 13. Therefore, we do not sustain the Examiner’s rejection of claims 3–7, 10–12, and 16–20 under 35 U.S.C. § 103(a) for the same reasons set forth above with respect to the independent claims.

DECISION

The Examiner’s rejections of claims 1, 3–8, 10–14, and 16–20 under 35 U.S.C. § 103(a) are not sustained.

REVERSED