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EXAMINER

DINH, TIEN QUANG

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte RONALD M. MULLER

Appeal 2014-008838
Application 12/977,397
Technology Center 3600

Before MICHAEL L. HOELTER, LYNNE H. BROWNE, and
JILL D. HILL, *Administrative Patent Judges*.

BROWNE, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Ronald M. Muller (Appellant) appeals under 35 U.S.C. § 134 from the rejection of claims 1–12. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

CLAIMED SUBJECT MATTER

Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A method comprising:
providing two or more momentum wheels arranged for rotation on a spacecraft in a momentum-canceling set;

causing the two or more momentum wheels in the momentum-canceling set to rotate at momentum-canceling speeds; and

reducing rotational speed of a momentum wheel in the momentum-canceling set to initiate a slew of the spacecraft.

REFERENCES

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Shah	US 6,003,818	Dec. 21, 1999
Hennigan	US 6,523,785	Feb. 25, 2003

REJECTIONS

- I. Claim 3 stands rejected under 35 U.S.C. § 112, second paragraph, as indefinite.
- II. Claims 1–12 stand rejected under 35 U.S.C. § 102(b) as anticipated by Hennigan or, in the alternative, under 35 U.S.C. § 103(a) as unpatentable over Hennigan and Shah.

DISCUSSION

Rejection I

The Examiner determines that claim 3 is indefinite because it is unclear if the “‘momentum-canceling speeds’ [recited in claim 3 is] the same as the one claimed in claim 1.” Final Act. 2.

Noting that claim 3 “does not require the momentum-canceling speeds to be the same momentum-canceling speeds recited in independent claim 1,” Appellant argues that claim 3 is unambiguous. Appeal Br. 11. Appellant is correct. As claim 3 does not require the same momentum-canceling speeds as claim 1, the meaning of claim 3 is clear.

We do not sustain the Examiner's decision rejecting claim 3 as indefinite.

Rejection II

Appellant argues claims 1–12 together. *See, e.g.*, Appeal Br. 10. We select independent claim 1 as the representative claim, and claims 2–12 stand or fall with claim 1.

The Examiner finds that the combined teachings of Hennigan and Shah disclose or suggest all of the limitations of independent claim 1. In particular, the Examiner finds that Shah “show[s] that momentum wheels do have the capability to perform slewing.”¹ Final Act. 3 (citing Shah, abstract, Fig. 4).

Appellant contends that “the Examiner has not demonstrated that any reference, alone or in combination with other references, discloses ‘reducing rotational speed of a momentum wheel in the momentum-canceling set to initiate a slew.’” Appeal Br. 9. Appellant's contention attacks the references separately and not their combined teachings. The rejection relies upon Hennigan for reducing rotational speed of a momentum wheel (*See* Final Act. 3; *see also* Hennigan 2:52–57) and Shah for use of momentum wheels to initiate slew. Final Act. 3. Nonobviousness cannot be established by attacking the references individually when the rejection is predicated upon a combination of prior art disclosures. *See In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

Appellant further contends that “[a]t most, Shah discloses creating ‘wheel torques that modify the attitude of the spacecraft 20’ by accelerating reaction wheels.” Appeal Br. 9 (citing Shah, 5:44–54); *see also* Reply Br. 3.

¹ “For purposes of this patent application, *slew* refers to rotation of an object such as a spacecraft about an axis thereof.” Spec. ¶ 2.

Based on this contention, Appellant argues that “the combination of Hennigan and Shah fails to disclose ‘reducing rotational speed of a momentum wheel in the momentum-canceling set to initiate a slew’ as required by independent claim 1.” *Id.* at 9–10.

Shah states:

Control logic 34 accepts attitude measurements from attitude sensors, shown generally as block 100, rotational rate measurements from rate sensors, shown generally as block 102, and desired attitude signals, shown as block 104. The desired attitude signals may be commanded from a ground station not shown or may be produced from an on-board algorithm. Control logic 34 develops wheel torque commands for reaction wheel system 22. These commands create wheel torques that modify the attitude of spacecraft 20 through spacecraft dynamics, shown generally by block 106.

Shah 5:44–54 (emphasis omitted). As correctly noted by the Examiner (Ans. 5), this paragraph is not limited to torque commands which only accelerate the reaction wheels. Thus, Appellant’s argument is unconvincing. Moreover, we agree with the Examiner that “[o]ne skilled in the art would realize that momentum wheels have various rotational speeds that are either added or reduced in order to control the satellite.” *Id.*

Appellant raises new arguments in the Reply Brief. *See* Reply Br. 3–4. In accordance with 37 C.F.R. § 41.41 (b)(2), lacking a showing of good cause, we do not consider the arguments raised in the Reply Brief which are not responsive to an argument raised in the Answer.

We sustain the Examiner’s decision rejecting claim 1, and claims 2–12 which depend therefrom as unpatentable over Hennigan and Shah. Having made this determination, we need not consider the Examiner’s alternative anticipation analysis.

DECISION

The Examiner's rejection of claim 3 under 35 U.S.C. § 112, second paragraph, is REVERSED.

The Examiner's rejection of claims 1–12 under 35 U.S.C. § 102(b) as anticipated by Hennigan, or in the alternative, under 35 U.S.C. § 103(a) as unpatentable over Hennigan and Shah is AFFRIMED.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED