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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte GRANT MOREY STEVENS, DOMINIC JOSEPH CROTTY, and
ROY A. NILSEN

Appeal 2019-001949
Application 14/268,404
Technology Center 2800

Before ROMULO H. DELMENDO, LILAN REN, and JANE E. INGLESE,
Administrative Patent Judges.

REN, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1–22. *See* Final Act. 2. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

¹ We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as “General Electric Company.” Appeal Br. 4.

CLAIMED SUBJECT MATTER

The claims are directed to “computed tomography (CT) imaging,” particularly, “for selection of bowtie filtration configuration[.]” Spec. ¶ 1. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A computed tomography (CT) imaging system comprising:

a selectable pre-object filter module interposed between an X-ray source and an object to be imaged, the selectable pre-object filter module configured to absorb radiation from the X-ray source to control distribution of X-rays passed to the object to be imaged, the selectable pre-object filter module comprising plural pre-object filter configurations providing corresponding X-ray distributions, wherein the selectable pre-object filter module is selectable between the plural configurations to provide a selected pre-object filter configuration of the plural pre-object filter configurations to perform a desired imaging scan of the object to be imaged;

a detector configured to receive X-rays that have passed through the object to be imaged; and

a processing unit operably coupled to the selectable pre-object filter module and the detector, the processing unit configured to:

identify an anatomy to be imaged;

determine a corresponding image quality metric and radiation dose metric separately for each of the plural pre-object filter configurations based on particular operational parameters to be used to perform the desired imaging scan, wherein the operational parameters include tube voltage and tube current; and

select the selected pre-object filter configuration from among the pre-object filter configurations based upon the separately determined corresponding image quality metrics and radiation dose metrics.

Claims Appendix (Appeal Br. 25–26) (emphases added).

REFERENCES

The prior art references relied upon by the Examiner are:

Name	Reference	Date
Toth	US 2005/0089136 A1	Apr. 28, 2005
Yoshida	US 2012/0002782 A1	Jan. 5, 2012

REJECTIONS

The Examiner rejects claims 1–3, 5–7, 10–15, 18, 19, 21, and 22 “under 35 U.S.C. 102(a)(1)/(a)(2)” for anticipation by Yoshida. Final Act. 2.

The Examiner rejects claims 4, 8, 9, 16, 17, and 20 under 35 U.S.C. § 103 as being unpatentable over Yoshida and Toth. Final Act. 9.

OPINION

In rejecting claim 1, the Examiner finds that Yoshida discloses an “L filter” which “has a higher image quality for low dose scout scans” as well as an “S filter” which “has a higher image quality for higher dose regular scans.” Final Act. 3. The Examiner finds that this prior art disclosure meets the limitation “determine a corresponding image quality metric and radiation dose metric separately for each of the plural pre-object filter configurations” of claim 1. *Id.* The Examiner also finds that the limitation “based on particular operational parameters to be used to perform the desired imaging scan” is met by the prior art disclosure of “source tube V and/or mA required for a low dose scout, scan, as well as a desired FOV, patient support position, scan angle, and contrast mode, to be used to perform the desired

imaging scan[.]” *Id.* at 3–4 (citing Yoshida ¶¶ 32, 50–52, 60, 65, 78, 83–97, and 101–110).

The record shows Yoshida discloses compensation filters that “adjust the X-ray dose irradiated from the X-ray tube **201** so that the X-ray intensity can be varied.” Yoshida ¶ 50 (cited in Final Act. 4). These compensation filters include an “L-sized compensation filter,” which “is suitable for the scanning target having a large width such as an abdominal region,” as well as an S-sized compensation filter, which “is suitable for the scanning target having a small radius such as a head region, a heart region . . . or a child.” *Id.* ¶¶ 51, 52 (cited in Final Act. 4). The filters are selected “according to the designated reconstruction FOV” or field of view. *Id.* ¶ 65 (cited in Final Act. 4); *see also id.* ¶ 84 (cited in Final Act. 4).

Appellant acknowledges that Yoshida “selects the filter based on the reconstruction FOV,” but argues that the filter selection in Yoshida does not disclose “determin[ing] a corresponding image quality metric and radiation dose metric separately for each of the plural pre-object filter configurations” as recited in claim 1. Appeal Br. 14.

The record before us shows that the Examiner finds the limitation “determine a corresponding image quality metric . . . for each of the plural pre-object filter configurations” anticipated solely by the prior art disclosure of the L-size filter having “a higher image quality for low dose scout scans” and the S-size filter having “a higher image quality for higher dose regular scans.” Final Act. 3; *see also* Ans. 4. The record, however, lacks evidentiary support showing that the prior art discloses a system with a processor configured to determine a certain “corresponding image quality metric,” which is distinguishable from the broader phrase “image quality” in the

Examiner's finding. *See id.* As a result, we do not sustain the anticipation rejection of claim 1. We likewise reverse the rejections of claims dependent from claim 1.

Independent claims 10 and 18 both recite this particular limitation and we reverse the anticipation rejection of claims 10 and 18 for the reasons provided with regard to claim 1. We likewise reverse the rejections of claims dependent from claims 10 and 18.

CONCLUSION

The Examiner's rejections are reversed.

More specifically,

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1-3, 5-7, 10-15, 18, 19, 21, 22	102	Yoshida		1-3, 5-7, 10-15, 18, 19, 21, 22
4, 8, 9, 16, 17, 20	103	Yoshida, Toth		4, 8, 9, 16, 17, 20
Overall Outcome:				1-22

REVERSED