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FITCH EVEN TABIN & FLANNERY, LLP VARIAN MEDICAL SYSTEMS 120 SOUTH LASALLE STREET SUITE 2100 CHICAGO, IL 60603-3406			DORNA, CARRIE R	
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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* JARKKO PELTOLA, JANNE NORD, and  
MARIA ISABEL CORDERO MARCOS

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Appeal 2018-003825  
Application 14/040,095<sup>1</sup>  
Technology Center 3700

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Before STEFAN STAICOVICI, EDWARD A. BROWN, and  
RICHARD H. MARSCHALL, *Administrative Patent Judges*.

STAICOVICI, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner’s decision in the Final Office Action (dated Mar. 6, 2017, hereinafter “Final Act.”) rejecting claims 1, 2, 4–9, and 11–14. We have jurisdiction over this appeal under 35 U.S.C. § 6(b).

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<sup>1</sup> Varian Medical Systems International AG is the applicant and identified as the real party in interest in Appellants’ Appeal Brief (filed Aug. 7, 2017, hereinafter “Appeal Br.”). Appeal Br. 3.

## SUMMARY OF DECISION

We REVERSE.

## INVENTION

Appellants' invention is related "to the therapeutic irradiation of a patient's target volume." Spec. para. 2.

Claims 1 and 8 are independent. Claim 1 is illustrative of the claimed invention and reads as follows:

1. An apparatus comprising:  
a control circuit configured to:
  - provide a user with an opportunity to designate a patient structure to be protected from radiation when the designated patient structure overlies a patient target volume in a particular radiation treatment angle, thereby providing a designated patient structure;
  - when optimizing a radiation-treatment plan with respect to the patient target volume, using the designated patient structure as an area to be masked from radiation by at least one multi-leaf collimator during administration of the radiation-treatment plan when the designated patient structure is positioned between the patient target volume and a source of radiation;  
a radiation treatment platform operably coupled to the control circuit and configured to deliver the radiation-treatment plan as optimized to a patient.

## REJECTION

The Examiner rejects claims 1, 2, 4–9, and 11–14 under 35 U.S.C. § 102(a)(1) as being anticipated by Wang et al. (US 2006/0274885 A1, pub. Dec. 7, 2006, hereinafter "Wang").

## ANALYSIS

The Examiner finds that Wang discloses a method and device including, *inter alia*, a control circuit that provides a user an opportunity to designate a patient structure to be protected from irradiation when it overlies a patient target volume using a multi-leaf collimator to mask the designated patient structure. Final Act. 2 (citing Wang, paras. 9, 40, 87–89, 91–92, 95, 96, 98, 99, 105, and 121, Figs. 12, 14, and 15). Specifically, the Examiner finds that paragraph 95 of Wang discloses that “collimator size and beam path(s) are selected to prevent undesired irradiation of critical structures,” whereas paragraph 121 of Wang discloses using a multi-leaf collimator to shape a radiation beam such that portions of the beam are blocked resulting in a beam having a pre-defined shape. *Id.* at 5. Thus, according to the Examiner, Wang’s “collimator blocks radiation from being delivered to critical structures that would otherwise be in the path of radiation” “by masking undesired radiation to designated critical regions, whether they are located to the side of a target or overly the target.” *Id.*

In response, Appellants argue that although Wang discloses “a need to identify critical volumes that should avoid irradiation,” Wang “does not take into account an *overlying* critical structure that, in the field of view of the radiation source, lies *within* the sides of the target volume.” Appeal Br. 8, 10. Rather, according to Appellants, Wang uses a collimator “to create a radiation beam that conforms to the shape of the target and . . . avoids critical structures to the *sides* of the target volume.” *Id.* at 9. Appellants further assert that the use of the claim term “configured” does not permit the Examiner “to rely upon the idea that the prior art reference might nevertheless be capable of performing as claimed as such an approach places undue reliance upon the *inherent* teachings of the prior art

references.” *Id.* at 11 (citing *In re Tiple*y, Appeal No. 2009-000300, BPAI 2009) (emphasis added).

In response, the Examiner takes the position that in light of Wang’s paragraphs 95 and 121, Wang discloses

[T]he leaves of the multi-leaf collimator are adjusted to create an aperture shape that blocks, or ‘masks’, portions of the radiation beam that would otherwise irradiate a critical structure in its path if the collimator leaves did not intervene (e.g., a critical structure that overlies a tumor or otherwise targeted tissue boundary and the beam source).

Examiner Answer (dated Dec. 26, 2017, hereinafter “Ans.”) at 3–4.

We appreciate the Examiner’s position that Wang discloses choosing collimator size and beam path(s) to prevent undesired irradiation of critical structures. *See* Final Act. 5, Ans. 3. We further appreciate that in paragraph 121 Wang discloses shaping a radiation beam using a multi-leaf collimator that blocks a portion of the beam, such that the incident beam on the patient has a pre-defined shape. *See id.* However, for the following reasons, such teachings do not support the Examiner’s determination that Wang’s multi-leaf collimator is used to mask a designated patient structure that *overlies* a patient target volume, as required by each of independent claim 1 and 8, because it requires speculation on the Examiner’s part.

First, we agree with Appellants that Wang’s paragraph 95 refers to “conformal planning,” where a skilled artisan creates a radiation beam that conforms to the shape of the target volume, avoids structures located “to the *sides* of the target volume,” and “critical regions can receive undue radiation exposure.” Appeal Br. 9–10; *see also*, Wang, para. 95 (“one parameter for conformal planning may be collimator size”; “minimum dose constraint for the target region and a

maximum dose constraint for a critical region”), Fig. 1. Secondly, Appellants are correct that paragraph 121 merely describes a “system that exposes a [patient] target [volume] to radiation from a variety of different angles and that uses a multi-leaf collimator to shape the radiation beam.” Reply Brief (filed Feb. 26, 2018, hereinafter “Reply Br.”) at 3. Such a teaching is similar to Appellants’ description of “arc therapy,” which according to Appellants, is not used when a “patient structure partially *overlies* . . . the patient target volume.” See Spec. 2, paras. 3, 4 (emphasis added). Hence, the Examiner’s reliance on Wang’s paragraphs 95 and 121 is misplaced because these paragraphs do not *explicitly* disclose a control circuit to mask a critical structure that *overlies* a patient target volume using a multi-leaf collimator. Moreover, the Examiner has not adequately explained how Wang’s control circuit is “configured to” mask an overlaying critical structure to be protected from radiation as called for by claim 1. The mere ability to program Wang’s circuit to perform this function does not establish that Wang discloses the limitation. See *Typhoon Touch Techs. v. Dell, Inc.*, 659 F.3d 1376, 1380–81 (Fed. Cir. 2011).

We further agree with Appellants that the Examiner also appears to rely on a theory of *inherency* to establish that Wang’s control circuit uses a multi-leaf collimator to mask a critical structure that *overlies* a patient target volume. See Appeal Br. 10–11. However, “[i]nherent anticipation requires that the missing descriptive material is ‘necessarily present,’ not merely probably or possibly present, in the prior art.” *Trintec Indus., Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 1295 (Fed. Cir. 2002) (quoting *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999)). Here, just because Wang’s control circuit uses a multi-leaf collimator to shape a radiation beam, by blocking portions of the beam, to expose a patient

target volume to radiation from a variety of different angles, it does not mean that it would also *necessarily* mask an *overlying* critical structure to be protected from radiation. The Examiner's position is mere speculation based on an unfounded assumption that Wang's control circuit would *necessarily* use a multi-leaf collimator to mask a critical structure that *overlies* a patient target volume. For example, as discussed *supra*, Wang's system uses a multi-leaf collimator to expose a patient target volume to radiation from different angles (i.e., arc therapy), which is not the same as masking a critical structure that *overlies* a patient target volume. *Compare* Spec. 2, para. 3, *with* Wang, para. 121; *see also* Reply Br. 2.

Accordingly, for the foregoing reasons, we agree with Appellants that Wang fails to disclose "masking an overlying object to be protected from radiation," as required by each of independent claims 1 and 8. *See* Reply Br. 3. Therefore, we do not sustain the rejection of claims 1, 2, 4–9, and 11–14 under 35 U.S.C. § 102(a)(1) as anticipated by Wang.

#### SUMMARY

The Examiner's decision to reject claims 1, 2, 4–9, and 11–14 under 35 U.S.C. § 102(a)(1) is reversed.

REVERSED