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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/539,460	11/12/2014	Kun Hung Tu	SP13-372	3975
22928	7590	11/16/2018	EXAMINER	
CORNING INCORPORATED			SZEWCZYK, CYNTHIA	
SP-TI-3-1			ART UNIT	
CORNING, NY 14831			PAPER NUMBER	
			1741	
			NOTIFICATION DATE	
			DELIVERY MODE	
			11/16/2018	
			ELECTRONIC	

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* KUN HUNG TU and  
CRAIG STEVEN WEBER

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Appeal 2018-001713  
Application 14/539,460<sup>1</sup>  
Technology Center 1700

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Before KAREN M. HASTINGS, JAMES C. HOUSEL, and  
JEFFREY R. SNAY, *Administrative Patent Judges*.

SNAY, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant filed an appeal under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 1–7.<sup>2</sup> We have jurisdiction under 35 U.S.C. § 6(b).<sup>3</sup> We reverse and enter a new ground of rejection pursuant to 37 C.F.R. § 41.50(b).

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<sup>1</sup> Appellant is the Applicant, Corning Incorporated, which, according to the Appeal Brief, is the real party in interest. Appeal Brief (Appeal Br. 2) filed June 5, 2017.

<sup>2</sup> Claims 8–11 have been withdrawn from consideration. Final Act. Office Action Summary; Appeal Br. 10.

<sup>3</sup> Our Decision additionally refers to the Specification filed Nov. 12, 2014 (“Spec.”), the Final Office Action dated Aug. 26, 2016 (“Final Act.”), the Examiner's Answer dated Oct. 5, 2017 (“Ans.”); and the Reply Brief filed Dec. 4, 2017 (“Reply Br.”).

## BACKGROUND

The subject matter on appeal relates to methods of cutting sheet material (*see, e.g.*, claim 1). The Inventors disclose that lasers used to cut ion-exchanged glass interact with a chuck on which the glass is mounted, which damages the chuck and leads to the chuck being serviced or replaced periodically. Spec. ¶ 7. In view of this, the Inventors disclose a method of cutting a sheet material by placing a porous barrier between the sheet material and the support so the latter is protected from laser damage while minimizing chips on the surfaces of the material being cut by the laser. *Id.* ¶¶ 11, 22.

Independent claim 1 is illustrative and is reproduced below from the Claims Appendix of the Appeal Brief. Limitations at issue are italicized.

1. A method of cutting a sheet material, comprising;  
mounting the sheet material on a support;  
*forming a porous barrier structure between the sheet material and the support by interposing at least one sheet of porous material between the sheet material and the support;*  
focusing a laser beam at a target point relative to the sheet material on the support; and  
effecting a relative motion between the focused laser beam and the sheet material such that the focused laser beam moves along a predetermined path on the sheet material to cut the sheet material along the predetermined path while the porous barrier shields the support from damage by the focused laser beam.

### REJECTIONS ON APPEAL

- I. claims 1, 2, and 4–6 under 35 U.S.C. § 102(a)(1) as being anticipated by Urairi;<sup>4</sup>
- II. claim 3 as being unpatentable under 35 U.S.C. § 103 over Urairi in view of Satou;<sup>5</sup> and
- III. claim 7 as being unpatentable under 35 U.S.C. § 103 over Urairi in view of Rafla-Yuan.<sup>6</sup>

### DISCUSSION

#### *Rejection I*

Claims 1, 2, and 4–6 are rejected under 35 U.S.C. § 102(a)(1) as being anticipated by Urairi.

The Examiner finds Urairi discloses a method of cutting a sheet material in which a porous barrier is interposed between the sheet material and a support, citing the adhesive sheet 3 depicted in Figure 3 of Urairi. Final Act. 2.

Appellant contends Urairi does not disclose interposing at least one sheet of porous material between a sheet material and a support, as recited in claim 1, because Urairi does not disclose its adhesive sheet 3 as being a porous material. Appeal Br. 2–5. Appellant argues paragraph 143 of Urairi discloses a separator (e.g., one including paper) but paragraph 139 discloses the separator as being formed on a surface of an adhesive layer of Urairi's protective sheet 2, which is not interposed between a sheet material and a

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<sup>4</sup> Urairi et al., US 2007/0181543 A1, published Aug. 9, 2007 (“Urairi”).

<sup>5</sup> Satou, US 2006/0196599 A1, published Sept. 7, 2006 (“Satou”).

<sup>6</sup> Rafla-Yuan et al., US 5,961,852, issued Oct. 5, 1999 (“Rafla-Yuan”).

support. *Id.* at 5. Thus, according to Appellant, the Examiner is conflating the adhesive layer and separator of Urairi's protective sheet 2 with the adhesive sheet 3, which Urairi does not disclose as including a separator. *Id.*

The Examiner responds to Appellant's arguments with the following:

In paragraph 0144, Urairi states that "[a]s the adhesive sheet 3, a general material having an adhesive layer laminated on a base material may be used without particular limitation". This indicates that the teachings of the adhesive layers of protective sheet 2 would apply to an adhesive layer of the adhesive sheet 3.

In paragraph 0139, Urairi details that "[t]he adhesive layer may one [*sic*] layer or two or more layers. As required, a separator may be formed on the surface of the adhesive layer". Paragraph 0143 further recites that "[t]he material for the separator includes paper".

Therefore, since the teachings of the adhesive layers of protective sheet 2 apply to the adhesive sheet 3, Urairi teaches a paper separator layer on adhesive sheet 3, which reads on the claimed porous barrier.

Ans. 2.

Appellant's arguments are persuasive. Paragraph 139 of Urairi discloses the protective sheet 2 includes an adhesive layer formed on a base material and a separator formed on a surface of the adhesive layer.

Paragraph 143 states the separator may include paper or a synthetic resin film. As shown in Figure 3 of Urairi, the protective sheet 2 is located above both a workpiece 1 and a stage 5. Therefore, the protective sheet 2 is not interposed between a sheet material and a support, as recited in claim 1.

Paragraph 144 of Urairi discloses "an adhesive layer laminated on a base material may be used [for the adhesive layer 3] without particular limitation." Although this indicates various materials could be used as the base material of the adhesive sheet 3, Urairi does not describe the base

material of the adhesive sheet 3 being made of a porous material or that adhesive sheet 3 can be made of the same materials as the separator of the protective sheet 2. “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). Here, Urairi’s disclosure does not support the Examiner’s findings that Urairi discloses a porous material interposed between a sheet material and a support, as recited in claim 1.

Nor has the Examiner set forth a proper basis to find that Urairi’s adhesive sheet 3 necessarily includes a porous material. The Examiner’s explanation in the Examiner’s Answer relies upon the possibility that the base material of the adhesive sheet 3 may include the same material as the separator of the protective sheet 2 because Urairi places no limit on the base material for the adhesive sheet 3. “Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) (citations omitted). To rely upon a theory of inherency, there must be “a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.” *Ex parte Levy*, 17 USPQ2d 1461, 1464 (BPAI 1990).

As a result, the Examiner has not set forth a prima facie case of anticipation for claim 1. Claims 2 and 4–6 depend from claim 1.

For these reasons, we do not sustain the Examiner’s § 102 rejection of claims 1, 2, and 4–6 over Urairi.

*Rejections II and III*

Claims 3 and 7 depend from claim 1. The § 103 rejections of claims 3 and 7 include Satou and Rafla-Yuan in addition to Urairi and have the same deficiencies as the § 102 rejection of claim 1. Although each of the remaining § 103 rejections relies on additional prior art references, the Examiner's findings and conclusion for these rejections do not remedy the deficiencies in the § 102 rejection over Urairi. Therefore, we do not sustain the § 103 rejections of claims 3 and 7.

NEW GROUNDS OF REJECTION

Claims 1–6 are rejected as being unpatentable under 35 U.S.C. § 103 over Urairi in view of Satou.

As noted, Urairi discloses providing an adhesive sheet between a support and a sheet material to be cut, and that, for the adhesive sheet, “a general material having an adhesive layer laminated on a base material may be used without particular limitation.” Urairi ¶ 144. Satou discloses processing a composite green sheet by irradiating the green sheet with a laser while the green sheet is supported on a base member to form a through hole. Satou ¶ 10. Satou discloses that the base member can be “a porous base material such as porous PET, porous PEN or the like impregnated with a liquid, or a fibrous base material such as paper impregnated with a liquid.” *Id.* ¶ 69. Thus, Satou demonstrates it was known in the art of laser processing/cutting to support a workpiece with a porous member, such as a fibrous base material, particularly paper. As a result, it would have been obvious to one of ordinary skill in the art to select a fibrous base material as the base material for Urairi's adhesive sheet 3 in light of its known

suitability for that purpose. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416–417 (2007). Selecting paper, which inherently is porous and fibrous, also meets the limitations of claims 2 and 3.

With regard to claims 4–6, Appellant does not direct us to any error in the Examiner’s findings of fact or conclusions of law as applied to the further limitations recited in these claims. *Compare* Final Act. 3, *with* Appeal Br. 6 (arguing only that claims 4–6 depend from claim 1). We adopt the Examiner’s findings set forth in the Final Office Action for rejecting claims 4–6.

Claim 7 is rejected as being unpatentable under 35 U.S.C. § 103 over Urairi and Satou and further in view of Rafla-Yuan.

We adopt the Examiner’s findings and conclusion (Final Act. 5) that, in light of Rafla-Yuan, it would have been obvious to operate Urairi’s laser with a pulse duration in a nanosecond regime. Appellant does not challenge that finding. *See* App. Br. 7.

## DECISION

The Examiner’s decision rejecting claims 1–7 is reversed. We enter new grounds of rejection for claims 1–7 under § 103.

## TIME PERIOD FOR RESPONSE

This decision contains new grounds of rejection pursuant to 37 C.F.R. § 41.50(b). 37 C.F.R. § 41.50(b) provides “[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review.”

37 C.F.R. § 41.50(b) also provides that the appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

(1) *Reopen prosecution.* Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the prosecution will be remanded to the examiner. . . .

(2) *Request rehearing.* Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

REVERSED

37 C.F.R. § 41.50(b)