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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/159,292	01/20/2014	Denis DE CEUSTER	10031.001111	9161
74254	7590	08/14/2019	EXAMINER	
Okamoto & Benedicto LLP P.O. Box 641330 San Jose, CA 95164-1330			TRINH, THANH TRUC	
			ART UNIT	PAPER NUMBER
			1726	
			MAIL DATE	DELIVERY MODE
			08/14/2019	PAPER

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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* DENIS DE CEUSTER and PETER JOHN COUSINS

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Appeal 2018-007893  
Application 14/159,292  
Technology Center 1700

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Before CATHERINE Q. TIMM, JEFFREY B. ROBERTSON, and  
BRIAN D. RANGE, *Administrative Patent Judges*.

TIMM, *Administrative Patent Judge*.

DECISION ON APPEAL  
STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant,<sup>1</sup> SunPower Corporation, appeals from the Examiner's decision to finally reject claims 21–27 and 35–40. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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<sup>1</sup> We use the word “Appellant” to refer to “Applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as the SunPower Corporation. Appeal Br. 1.

The claims are directed to a solar cell with reduced base diffusion area. Claim 21, reproduced below, is illustrative of the claimed subject matter:

21. A solar cell comprising:

a first metal contact electrically coupled to an emitter diffusion region;

a second metal contact electrically coupled to a base diffusion region, wherein the second metal contact is formed over the base diffusion region and the emitter diffusion region, and the base diffusion region contacts the emitter diffusion region at a contact edge; and

a first insulator between the second metal contact and the emitter diffusion region, the first insulator electrically insulating the emitter diffusion region from the second metal contact, and the first insulator forming an insulating region that extends continuously over and that contacts: a portion of the emitter diffusion region, a portion of the base diffusion region, and the contact edge.

Appeal Br. 7 (claims appendix).

The Examiner maintains the following rejections (Ans. 3):

A. The rejection of claims 21–24 and 35–38 under 35 U.S.C. § 103(a) as being unpatentable over Uematsu.<sup>2</sup>

B. The rejection of claims 25–27, 39, and 40 under 35 U.S.C.

§ 103(a) as being unpatentable over Uematsu in view of Munzer.<sup>3</sup>

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<sup>2</sup> Uematsu et al., US 2002/0046765 A1, published Apr. 25, 2002.

<sup>3</sup> Munzer, US 2005/0016585 A1, published Jan. 27, 2005.

## OPINION

All of the claims require “a first insulator . . . forming an insulating region that extends continuously over and that contacts: a portion of the emitter diffusion region, a portion of the base diffusion region, and the contact edge.” Claims 21 and 35.

The Examiner finds that Uematsu’s silicon oxide masking layer 2 and insulating layer 20, in combination, are the “first insulator” of claims 21 and 35. Final Act. 3–4 (citing Uematsu Fig. 17D and ¶ 130). There is no dispute that neither layer alone extends continuously over and contacts a portion of the emitter diffusion region (n-type dopant layer 4), a portion of the base diffusion region (p-type dopant layer 6), and a contact edge between the two. Final Act. 4. The Examiner concludes, however, that it would have been obvious to configure the emitter and base diffusion regions (n-type and p-type dopant regions) as shown in Figures 15A–E so that the combination of the masking layer 2 and insulating layer 20 would extend and contact as required by the claims. Final Act. 4–5. Because neither the masking layer 2 nor insulating layer 20 alone extend and contact as required by the claims, the dispositive issue in this appeal is: Has Appellant identified a reversible error in the Examiner’s finding that Uematsu’s combination of masking layer 2 and insulating layer 20 is “a first insulator” as required by the claims?

Appellant has identified such an error.

Claims 21 and 35 require “a first insulator” that has the continuous extent and contact required by those claims. The words that follow “a first insulator” apply to “a first insulator,” i.e., a single insulator. Although the transitional phrase “comprising” of the claims allows for further insulators,

at least one insulator, i.e., an insulator that can be termed “a first insulator,” must meet all of the structural and positional limitations recited as applying to “a first insulator.” *See Kustom Signals, Inc. v. Applied Concepts, Inc.*, 264 F.3d 1326, 1332 (Fed. Cir. 2001) (“The open-ended transition ‘comprising’ does not free the claim from its own limitations.”). The Examiner has not established that a single insulator has the necessary continuous extent and contacts required by the claims.

DECISION

The Examiner’s rejection is reversed.

DECISION SUMMARY

<b>Claims Rejected</b>	<b>Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
21–24 and 35–38	§ 103(a) Uematsu		21–24 and 35–38
25–27, 39, and 40	§ 103(a) Uematsu and Munzer		25–27, 39, and 40
<b>Outcome</b>			21–27 and 35–40

REVERSED