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13/934,256	07/03/2013	David J. COOPER	JAR-3691-3088	1067

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EXAMINER	
ROBITAILLE, JOHN P	

ART UNIT	PAPER NUMBER
1743	

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DAVID J. COOPER

Appeal 2018-005477
Application 13/934,256
Technology Center 1700

Before ROMULO H. DELMENDO, DONNA M. PRAISS, and SHELDON M. MCGEE, *Administrative Patent Judges*.

MCGEE, *Administrative Patent Judge.*

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant[1] seeks our review of the Examiner's decision to reject claims 27 and 30–32.

We have jurisdiction. 35 U.S.C. § 6.

An oral hearing was conducted September 19, 2019.

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 Guardian Glass, LLC. Appeal Br. 3.

SUBJECT MATTER

The subject matter on appeal relates to a method of edge sealing vacuum insulating glass (VIG) units. Spec. ¶ 1.

Sole independent claim 27 is illustrative of the claimed subject matter and is copied below with key limitations at issue in this appeal italicized:

> 27. A method of making a vacuum insulating glass (VIG) window unit, including an edge seal, the method comprising:
>
> providing a unit comprising first and second substantially parallel spaced apart glass substrates, one or more edge portions of the first and second substrates to be sealed, and a frit provided at least partially between the first and second glass substrates for sealing said one or more edge portions to be sealed;
>
> pre-heating the unit in substantially its entirety to at least one intermediate temperature, each intermediate temperature in the pre-heating being below a melting point of the first and second substrates and below a melting point of the frit; and
>
> after said pre-heating, *focusing near infrared (IR) inclusive radiation* at a wavelength of at least from about 1.1–1.4 μm, *via a parabolic mirror*, to the unit proximate to the edge portions to be sealed so as to at least partially melt the frit, the focused localized near IR heat being provided to the unit such that at least some areas of the unit not proximate to the edge portions to be sealed are kept at a temperature(s) below frit-melting temperature in making the vacuum insulating glass (VIG) window unit.

Appeal Br. 15 (emphasis added).

STATEMENT OF THE CASE

Claims 27 and 30–32 stand rejected as obvious under 35 U.S.C. § 103(a) over Tang.[2] Final Act. 2–3. In rejecting these claims, the

[2] CN 1676481 A, published October 5, 2005. We rely on the English translation of record.

Examiner finds that Tang discloses each claimed limitation except for the recited wavelength of near infrared (IR) inclusive radiation, but determines that such wavelength would have been obvious to the skilled artisan because it would achieve "the benefit of applying the minimal energy necessary to melt the frit." *Id.*

The Examiner finds, *inter alia*, that Tang discloses focusing infrared (IR) radiation via a parabolic mirror. Final Act. 3. For support, the Examiner relies on item 8 of Tang's Figure 4 set forth below:

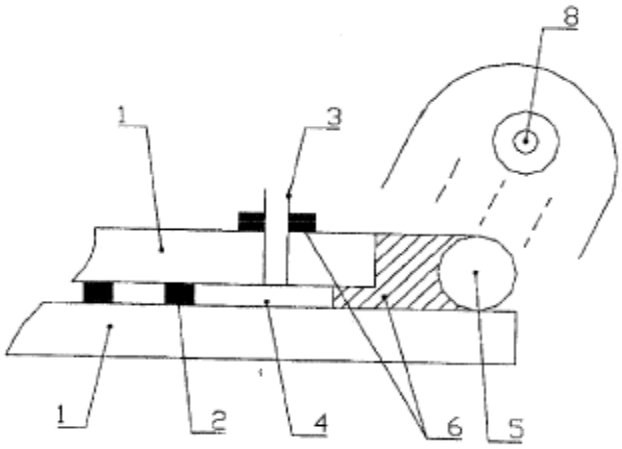

图4

Tang's Figure 4 depicts "a thermal edge schematic radiation heating method" having a "radiant heat source 8" that applies heat sufficient to melt solder/brazing material 6 around upper and lower glass plates 1. Tang, 3.[3] As depicted in Tang's Figure 4, there appears to be a U-shaped or curved

[3] Although the English translation of Tang of record in this appeal is not numbered, our Decision references the consecutive pagination of such English translation.

element close to radiant heat source 8. Tang, Fig. 4. The Examiner appears to rely on this curved element to evince the "parabolic mirror" limitation. *See* Ans. 4–5 ("Since the applied prior art teaches collimated radiation issuing from a curved reflector, the examiner has concluded that the applied prior art reflector is a parabolic reflector.").

OPINION

We need only address independent claim 27 from which all other claims depend. Appellant challenges the Examiner's finding that Tang discloses a parabolic mirror. Appeal Br. 11–13. Specifically, Appellant avers that the limitation of a "'parabolic' mirror is NOT met by any curved mirror" because the term "parabolic" is "much narrower in scope [than] simply 'curved'." *Id.* at 11–12. Appellant asserts that a parabolic mirror "requires a parabola, which is a curve formed by the intersection of a right circular cone with a plane parallel to an element of the cone, via equation $y^2 = 2px$, $x^2 = 2py$, and/or $y = x^2$," and that no such parabola is disclosed by Tang. *Id.* at 12. For this reason, Appellant argues that the rejection is based on an erroneous factual finding. *Id.* Appellant furthermore notes that the rejection fails to advance any rationale that suggests it would have been obvious to have modified Tang to make the curved element meet the parabolic limitation recited in independent claim 27. *Id.*

On this record, we are persuaded that Appellant has identified reversible error in the rejection. The Examiner has failed to establish that the curved element disclosed in Tang is indeed a "parabolic mirror" as recited in claim 27 and as would be understood by one skilled in the relevant art in the context of the present disclosure. Spec. ¶ 45; Fig. 7. The Examiner points to no disclosure within Tang that evinces the curved

element in proximity to radiant heating element 8 is "parabolic." Final Act., *generally*; Ans., *generally*. Here, we are persuaded by Appellant's argument that not all curves are parabolas or parabolic. Appeal Br. 11–12. Rather, only certain curves appear to meet the geometric requirements of this art-recognized term in its ordinary usage[4] and that understanding is consistent with the manner in which the term is used in the present disclosure.

Because the Examiner fails to explain adequately how Tang's curved element meets such geometric requirements, or how modifying Tang's curved element to be parabolic would have been obvious, the obviousness conclusion is not factually supported and cannot be sustained. *In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967) ("The Patent Office has the initial duty of supplying the factual basis for its rejection. It may not . . . resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies" in the cited references).

CONCLUSION

The Examiner's rejection of claims 27 and 30–32 is reversed.

Claims Rejected	35 U.S.C. §	Basis	Affirmed	Reversed
27 and 30–32	103(a)	Tang		27 and 30–32

REVERSED

[4] Consistent with Appellant's position, a "parabola" is defined as "a plane curve formed by the intersection of a right circular cone with a plane parallel to a generator of the cone" or "the set of points in a plane that are equidistant from a fixed line and a fixed point in the same plane or in a parallel line. Equation: $y^2 = 2px$ or $x^2 = 2py$." www.dictionary.com/browse/parabola?s=t, last accessed October 2, 2019.

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Notice of References Cited	Application/Control No. 13/934,256	Applicant(s)/Patent Under Patent Appeal No. 2018-005477	
	Examiner	Art Unit 1743	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
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NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	Parabola definition
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

parabola [p*uh*-**rab**-*uh*-l*uh*] SHOW IPA

EXAMPLES|WORD ORIGIN
SEE MORE SYNONYMS FOR parabola ON THESAURUS.COM

noun ***Geometry***.

1 a plane curve formed by the intersection of a right circular cone with a plane parallel to a generator of the cone; the set of points in a plane that are equidistant from a fixed line and a fixed point in the same plane or in a parallel plane. Equation: $y^2 = 2px$ or $x^2 = 2py$.

RELATED WORDS