

NOTE: This disposition is nonprecedential.

# United States Court of Appeals for the Federal Circuit

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IN RE ORBITAL TECHNOLOGIES CORPORATION

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2014-1298, -1299

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Appeals from the United States Patent and Trade-  
mark Office, Patent Trial and Appeal Board in Reexami-  
nation Nos. 90/011,864 and 90/011,865.

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Decided: January 20, 2015

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HEATHER D. REDMOND, Dorsey & Whitney, LLP, of  
Minneapolis, Minnesota, argued for appellant. With her  
on the brief was NATHANIEL P. LONGLEY.

JEREMIAH S. HELM, Associate Solicitor, United States  
Patent and Trademark Office, of Alexandria, Virginia,  
argued for appellee. With him on the brief were NATHAN  
K. KELLEY, Solicitor, THOMAS W. KRAUSE, Deputy Solici-  
tor, and FARHEENA Y. RASHEED, Associate Solicitor.

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Before REYNA, CLEVINGER, and WALLACH, *Circuit Judges*.  
CLEVINGER, *Circuit Judge*.

Patent owner Orbital Technologies Corporation (“Or-  
bital”) appeals from two decisions of the Patent Trial and

Appeal Board (“Board”) of the United States Patent and Trademark Office (“PTO”) affirming the examiner’s rejection of all claims of two related patents for obviousness under 35 U.S.C. § 103(a). *Ex parte Orbital Techs. Corp.*, No. 2013-4262, Reexamination No. 90/011,864, 2013 WL 1289496 (P.T.A.B. Mar. 26, 2013) [hereinafter ‘018 Board Decision]; *Ex parte Orbital Techs. Corp.*, No. 2013-4264, Reexamination No. 90/011,865, 2013 WL 1289497 (P.T.A.B. Mar. 26, 2013) [hereinafter ‘008 Board Decision]. The same examiner conducted both reexaminations. We consolidated the cases for argument and now address them together. *In re Orbital Techs. Corp.*, No. 2014-1298 (Fed. Cir. Oct. 27, 2014) (order consolidating for oral argument); *In re Orbital Techs. Corp.*, No. 2014-1299 (Fed. Cir. Oct. 27, 2014) (same).

Orbital challenges both the examiner’s use of a machine translation of the key prior art reference that was not provided to Orbital before the close of reexamination and the obviousness rejections.

We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A). Because Orbital waived any claims arising from the examiner’s use of the machine translation when it did not accept his offer to reopen reexamination with the translation on the record, and because the Board did not err in finding that the patents’ claims would have been obvious to a person of ordinary skill in the art, we *affirm*.

## BACKGROUND

### I

This appeal arose from the separate ex parte reexaminations of two related patents, Reexamination No. 90/011,864 of U.S. Patent No. 7,220,018 B2 (filed Dec. 15, 2004) (“the ‘018 patent”) and Reexamination No. 90/011,865 of its continuation U.S. Patent No. 7,473,008 B2 (filed Mar. 22, 2007) (“the ‘008 patent”). Both patents are entitled “Marine LED Lighting System and Method”

and are directed to a method and apparatus of lighting an open-top marine habitat using an LED lighting system.

#### A. The '018 Patent

The '018 patent issued on May 22, 2007 from an application that claims priority to December 15, 2003. It has eight claims, of which claims 1 and 5 are independent. Claim 1 is representative of the issues on appeal:

1. A combination marine habitat and lighting system therefor comprising:

a marine habitat having an open top defined by a top edge and

a lighting system including:

a housing connectable to said top edge to substantially cover said open top, said housing further including an inner side facing said open top when said housing is connected to said top edge and an opposite outer side;

an LED light source mounted to the inner side of said housing, said LED light source comprising at least one light engine having a plurality of individual LEDs capable of providing light at a wavelength from about 380 nm to about 690 nm;

a power supply sufficient to drive said LEDs;

a controller connected with said power source for controlling the activation status and the intensity of one or more of said individual LEDs; and

a cooling system provided in said housing.

#### B. The '008 Patent

The '008 patent issued on January 6, 2009 from a continuation of the application that led to the '018 patent and claims priority to the same date. A terminal disclaimer limits it to the '018 patent's term.

The '008 patent is subject to a prior ex parte reexamination, Reexamination No. 90/009,662, in which the examiner proposed to reject all eighteen issued claims as anticipated or obvious. *Ex Parte Reexamination Non-Final Office Action*, Reexamination No. 90/009,662 (Nov. 16, 2010). In response, the patent owner amended independent claims 1 and 15 to add a limitation to “cooling means for dissipating heat generated by the LED light source,” and claims 2 and 8 to add limitations not relevant here. The examiner found claims 1-7 and 15-18 patentable as amended based on the conclusion that the prior art did not disclose or make obvious the cooling means limitation. *Notice of Intent to Issue a Reexamination Certificate*, Reexamination No. 90/009,662 (July 1, 2011). The examiner also rejected claims 8-14, which the patentee then cancelled.

Following the prior reexamination, the '008 patent recites claims 1-7 and 15-18, of which claims 1 and 15 are independent. Claim 1 is representative:

1. A combination marine habitat and lighting system, comprising:

a marine habitat having an open top defined by a top edge; and

a lighting system comprising:

a housing connectable to the top edge to substantially cover the open top, the housing including an inner side facing the open top when the housing is disposed over the top edge, and an opposite outer side; and

an LED light source mounted to the inner side of the housing, the LED light source comprising at least one light engine having a plurality of individual LEDs capable of providing light at a wavelength from about 380 nm to about 690 nm.

## II

## A. Tomofuji

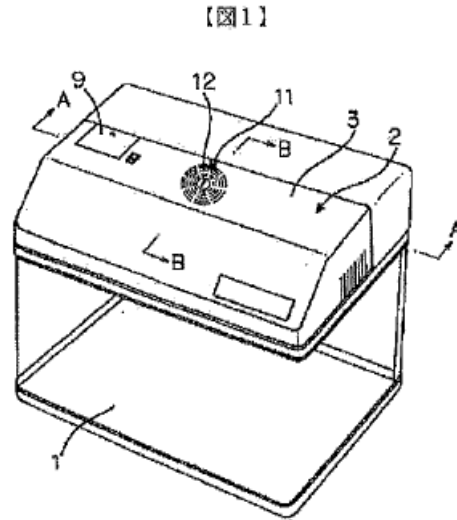
The key prior art reference is Japanese Patent No. 9-308409 A to Tomofuji, published December 2, 1997 (“Tomofuji”). Tomofuji teaches a cooling device for an aquarium lighting system.

Its original text is in Japanese with accompanying numbered figures. Two translations of its text are relevant in these proceedings: an English translation of its abstract (“the Abstract Translation”), and a machine translation of its full text (“the Machine Translation”).

The Abstract Translation describes Tomofuji’s teaching as follows, with reference to the accompanying Figure 1:

**PROBLEM TO BE SOLVED:** To provide the subject cooling device so designed that, even if the temperature inside the cover of an illuminator mounted on an aquarium fish basin rises abnormally high due to e.g. lighting of an illuminating lamp, the heated air is forcedly exhausted out of the cover to always keep the temperature inside the cover so as to prevent illuminator damage and/or fire accident.

**SOLUTION:** This cooling device has such scheme that the upper surface of an illuminator cover 3 mounted on the top of an aquarium fish basin 1 is provided with an air releasing portion 11 comprising many vents 12, the reverse side of the air releasing portion 11 is equipped with a fan motor, and the heated air generated inside the cover 3 due to e.g. lighting of an illuminating lamp is exhausted through the air releasing portion 11 out of the cover 3 by the revolution of the fan motor.



Tomofuji's full Japanese text includes this and seven other figures.

The Machine Translation is a full-text translation of Tomofuji that was done by a computer and is available for free online through the Japan Patent Office. *See Industrial Property Digital Library*, [http://www.ipdl.inpit.go.jp/homepg\\_e.ipdl](http://www.ipdl.inpit.go.jp/homepg_e.ipdl) (search the Patent and Utility Model Gazette Database for kind code "A" and number "1997-308409"). It opens with a disclaimer about its accuracy and does not translate all words in the patent, instead substituting a placeholder. The Machine Translation is frequently ungrammatical and poorly punctuated, which renders its teaching difficult to follow.

#### B. Other References

Six other prior art references were relied upon below: (1) Kuiper et al., PCT Application WO 91/18970 (Dec. 12, 1991) ("Kuiper"); (2) Ignatius et al., U.S. Patent No. 5,278,432 (filed Aug. 27, 1992) ("Ignatius"); (3) Lebens et al., U.S. Patent No. 6,305,818 (filed July 28, 2000); (4)

Janssen et al., *Photosynthetic Efficiency of Dunaliella Tertiolecta Under Short Light/Dark Cycles*, 29 *Enzyme & Microbial Tech.* 298-305 (2001); (5) Tazawa et al, Japanese Patent No. H10-162609 (published June 19, 1998); and (6) Masuda et al., Japanese Patent No. 6-319410 (published Nov. 22, 1994), which is cited only in the reexamination of the '008 patent.

On appeal Orbital challenges Board conclusions based on Kuiper and Ignatius. Kuiper describes “a method of cultivating a phototrophic aquatic organism in an aqueous environment” in which illumination provides energy to the organism. Kuiper at 1 ll.1-7. It teaches that LEDs are a preferred light source because they “save an enormous amount of energy in comparison with normal sources of artificial light,” *id.* at 4 ll.14-19, and that they can be arranged in many configurations and used either inside or outside the aqueous environment, *id.* at 7 ll.14-29.

Ignatius is directed to an “apparatus for providing radiant energy to enhance and test plant growth” that preferably uses LED arrays stored in modular housings. Ignatius at col.1 ll.5-10. It teaches that LEDs and fluorescent lamps can be substituted for each other, *id.* at col.3 ll.34-38, and describes LEDs’ advantages over fluorescent lamps, including that they achieve “minimal heat output” for the amount of light provided, *id.* at col.2 ll.62-65. Ignatius also teaches the use of “air vents” and an “internal fan” as part of a system that dissipates heat generated within the housing by the LED array. *Id.* at col.4 l.64-col.5 l.12.

### III

#### A. Ex Parte Reexamination

Two anonymous requests for ex parte reexamination were filed on August 17, 2011, one seeking reexamination of claims 1-8 of the '018 patent, and the other reexamina-

tion of claims 1-7 and 15-18 of the '008 patent. Every substantial new question of patentability (“SNQ”) and ground for rejection in the requests relied on Tomofuji in combination with other references.

Neither request provided an English translation of Tomofuji’s full text. Instead, the requests included the Abstract Translation and Tomofuji’s original Japanese text, with accompanying figures. They discussed Tomofuji using only these materials.

On August 29, 2011, the examiner obtained the Machine Translation of Tomofuji’s full text from the Japan Patent Office’s website, which he later acknowledged relying on throughout the proceedings. The examiner then found that both requests raised an SNQ as to all challenged claims and accordingly instituted an *ex parte* reexamination of each patent.

The SNQ determination for the '018 patent stated that an “English Translation [of Tomofuji] is provided herewith,” *Order Granting Request for Ex Parte Reexamination*, Reexamination No. 90/011,864 (Sept. 8, 2011). The SNQ determination for the '008 patent, which issued second, did not include this statement. The Machine Translation was not attached to either determination, and they do not otherwise directly reference Tomofuji’s full text.<sup>1</sup> Orbital did not challenge either SNQ determination.

The examiner then issued Non-Final Rejections rejecting all claims under reexamination as obvious over Tomofuji in combination with other references. For sup-

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<sup>1</sup> Both SNQ determinations discuss Tomofuji by citing only to its figures. They name parts of the figures that the Abstract Translation does not define—the “housing 2,” “light sources 4,” and “cooling fan 21”—without explaining the names’ source.



port the examiner cited specific paragraphs of Tomofuji's full text as well as its figures.<sup>2</sup>

Orbital traversed all rejections. Its response in the '018 patent's reexamination "note[d] that the Office Action relies on paragraphs 0001 to 0006 for rejections and no translation of these paragraphs has been made available." Orbital did not otherwise discuss the examiner's use of Tomofuji's full text.

The examiner then issued a Final Rejection of all claims in both reexaminations. When discussing Tomofuji, he once again cited its full text and figures.

### B. Appeal to the Board

Orbital appealed both reexaminations to the Board on June 20, 2012. In addition to challenging the obviousness rejections, its appeal briefs noted that neither the requestor nor the examiner had provided it with a translation of Tomofuji's full text. Orbital argued for the first time that these omissions rendered both the SNQ determinations and the rejections invalid.

On September 4, 2012, the examiner and counsel for Orbital discussed the translation's omission. The examin-

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<sup>2</sup> In the action for the '018 patent, the examiner frequently cited paragraphs 1 through 6 of Tomofuji's text as teaching a marine habitat and lighting system designed to prevent overheating the water, and once referred to paragraph 6 as teaching means to maintain the water at an appropriate temperature. In the action for the '008 patent, the examiner several times cited paragraph 15 as showing cooling means by which a fan pushed heated air out of the housing, and paragraph 3 as teaching that the light source can be set at a level sufficient to support marine growth.

er filed an interview summary describing their conversation as follows:

Mr. Longley was telephoned regarding a procedural oversight in not providing a translation of the Tomofuji reference. This translation was inadvertently not provided to Patent Owner or placed into the file history even though one was obtained by Examiner during prosecution. Examiner asked Mr. Longley as a courtesy whether it would be desirable to attach the translation as an appendix to an Examiner's Answer or to re-open prosecution and provide it in a non-final rejection. Mr. Longley agreed to accept the translation as an appendix to an Examiner's Answer, but also recognized it was within the discretion of the PTO to re-open prosecution.

In its own interview summary, Orbital did not dispute that the examiner had offered to reopen the reexaminations, and did not argue that it had accepted. Instead, Orbital repeated that reopening reexamination was within the examiner's discretion. The examiner did not reopen the reexaminations, and the Machine Translation was attached to the Examiners' Answer in each appeal.

The Board affirmed. In both cases, it first found that Orbital had waived its argument that the Machine Translation's omission from the record invalidated the decision to institute reexamination. Patent owners may appeal SNQ determinations to the Board "only if the patent owner first requests reconsideration before the examiner," *Clarification on the Procedure for Seeking Review of a Finding of a Substantial New Question of Patentability in Ex Parte Reexamination Proceedings*, 75 Fed. Reg. 36357, 36357 (June 25, 2010), and the Board determined that Orbital had failed to do so. '018 Board Decision at \*2-4; '008 Board Decision at \*2-4.

The Board also affirmed the examiner's obviousness rejections. In both cases, the Board found that Tomofuji teaches every element of the subject patent's claim 1 except for the use of LEDs rather than fluorescent lamps as the light source. *'018 Board Decision* at \*10; *'008 Board Decision* at \*10. The Board adopted the examiner's finding that it would have been obvious to one of skill in the art to replace Tomofuji's fluorescent bulbs with an LED light source. *'018 Board Decision* at \*11; *'008 Board Decision* at \*11. It reasoned that Kuiper teaches the use of LEDs in a combination marine habitat and lighting system, while Ignatius teaches that LEDs can be cooled with a fan system, *'018 Board Decision* at \*11; *'008 Board Decision* at \*11, and that LEDs are interchangeable with fluorescent lights, *'018 Board Decision* at \*13; *'008 Board Decision* at \*14. The Board also agreed with the examiner that a person of skill in the art would be motivated to replace Tomofuji's fluorescent bulbs with LEDs by Kuiper's teaching that LEDs are more energy-efficient than fluorescent lighting. *'018 Board Decision* at \*11; *'008 Board Decision* at \*11.

The Board rejected Orbital's argument that LEDs' greater energy efficiency means they do not require cooling: "Kuiper and Ignatius each teach, essentially, that LEDs emit less heat than other lights. Skilled artisans, given the combined teachings, would have recognized that enough LEDs at a sufficient size or power for a desired application necessarily would create heat which would require cooling, like Tomofuji's fluorescent light system and Ignatius's LED system." *'018 Board Decision* at \*11 (citations omitted); *see also '008 Board Decision* at 11.

Orbital petitioned for rehearing, which the Board denied. *Ex parte Orbital Techs. Corp.*, No. 2013-4262, Reexamination No. 90/011,864 (P.T.A.B. Oct. 30, 2013) [hereinafter *'018 Rehearing Decision*]; *Ex parte Orbital Techs. Corp.*, No. 2013-4264, Reexamination No.

90/011,865 (P.T.A.B. Oct. 30, 2013) [hereinafter '*'008 Rehearing Decision*].

#### DISCUSSION

We review the Board's legal conclusions de novo and its factual findings for substantial evidence. *In re Baxter Int'l, Inc.*, 678 F.3d 1357, 1361 (Fed. Cir. 2012). A finding is supported by substantial evidence if a reasonable mind might accept the evidence as adequate to support the finding. *Id.* (citing *Consol. Edison Co. v. NLRB*, 305 U.S. 197, 229 (1938)).

#### I

Orbital challenges the examiner's consideration of the Machine Translation. The Board found that "Orbital chose not to re-open prosecution before the Examiner," instead preferring to continue its appeal. '*'008 Rehearing Decision* at 9; *see also '018 Rehearing Decision* at 10 ("The record shows that Orbital chose the right to appeal to ask the Board to vacate the *SNQ Order*, instead of re-opening prosecution."). We conclude that substantial evidence supports this finding, and hold that Orbital waived any claims it may have had arising from the fact that it was not provided the Machine Translation.

Orbital agrees that the examiner offered to reopen the reexaminations with the translation on the record, and does not argue that it accepted this offer. Instead, Orbital contends that the offer was conditional, requiring it to waive all claims arising from the reexamination proceedings thus far. Its evidence for this argument is that it told the examiner it reserved its right to appeal the SNQ determinations based on the prior art of record, and the examiner did not reopen reexamination thereafter.

The record does not support Orbital's contention that the offer was conditional. Further, its argument confuses agreeing to waive an otherwise valid claim with losing a claim when it becomes moot. Had the examiner reopened

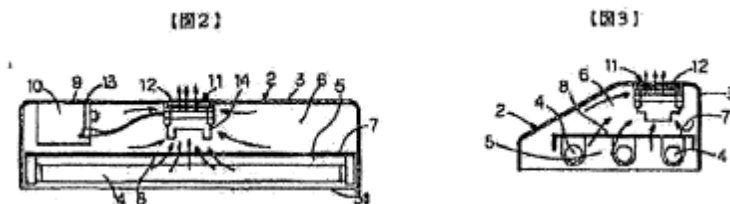
the reexaminations with the translation, Orbital would have lost its ability to appeal the earlier final rejections based on the translation's absence. Orbital could not have avoided this result by bargaining with the examiner.

Substantial evidence supports the Board's conclusion that Orbital chose to appeal its existing claims to the Board, rather than to return to reexamination with the translation, and the examiner acted in accordance with that choice. '018 *Rehearing Decision* at 10; '008 *Rehearing Decision* at 11. Orbital did so knowing that the examiner had used a translation it had not seen, and it cannot now undo its decision. We therefore conclude that Orbital waived any claims it might have had arising from the fact that it was not provided with the Machine Translation of Tomofuji before the close of reexamination.

## II

On appeal Orbital presents three challenges to the Board's obviousness conclusions.

First, Orbital contends that substituting LEDs into the system taught by Tomofuji would not result in the claimed inventions, which require the lights to be "mounted to" or "disposed on" the inner side of the housing, because Tomofuji's Figures 1 through 3 show the fluorescent lamps 4 mounted to a light reflector 7 that is itself attached to the housing:



Tomofuji figs. 2, 3. This argument reads the claims too narrowly. Nothing in their language requires the lamps to be attached directly to the housing without intervening material.

Second, Orbital argues that a person of ordinary skill in the art could not have adapted Tomofuji's system to cool LEDs, which its expert testifies generate heat not in their bulbs but in their electronics. Tomofuji, like the claimed inventions, teaches a system for dissipating heat generated inside the housing generally. *Compare* Abstract Translation (“the heated air generated inside the cover 3 due to e.g. lighting of an illuminating lamp” is forced out by a fan) *with '008 Board Decision* at \*12 (the “cooling system” limitation is a means-plus-function limitation corresponding to “a fan/air cooled system that draws air from the light system and exhaust[s it] from the light housing”). Further, Ignatius teaches the use of a fan-based system to cool LEDs. Ignatius at col.4 l.64-col.5 l.12. Orbital therefore shows no reason to disturb the Board's conclusion that Tomofuji's fan-based system could be used to cool LEDs. *See '018 Board Decision* at \*10-11; *'008 Board Decision* at \*10-11.

Third, Orbital contends that the prior art does not suggest the use of LED bulbs in Tomofuji's invention because LED bulbs generate less heat than fluorescent bulbs. The Board considered and properly rejected this argument. *'018 Board Decision* at \*11-12; *'008 Board Decision* at \*11-12. Kuiper and Ignatius teach that LEDs generate less heat than fluorescent bulbs, not that they generate no heat at all. As the Board found, LEDs in sufficient size or quantity would benefit from cooling, and this is sufficient motivation for a skilled artisan to cool them. *'018 Board Decision* at \*11; *'008 Board Decision* at \*11-12.

Substantial evidence supports the Board's determination that it would have been obvious for a person having

ordinary skill in the art to use the LED bulbs taught by Ignatius and Kuiper in the invention of Tomofuji. We further hold that the Board's conclusion that this would be motivated by Kuiper's teaching that LED lights are more energy-efficient than fluorescent bulbs was supported by substantial evidence.

### III

Finally, Orbital maintains that the Machine Translation's poor quality, untranslated words, and accuracy disclaimer render it insufficient evidence of Tomofuji's teaching to support a prima facie case of obviousness.

At oral argument, the court expressed concern about the dangers of relying on low-quality machine translations as evidence of the prior art, especially in cases involving technologies more complex than the marine habitats at issue here. Oral Argument at 18:27-21:28, *In re Orbital Techs. Corp.*, Nos. 2014-1298, -1299 (Nov. 5, 2014), available at <http://www.cafc.uscourts.gov/oral-argument-recordings>. The PTO agreed that there may well be cases where machine translations of the quality shown in this case are inadequate evidence of a reference's contents. *Id.* at 21:00.

Without blessing the use of machine translations in all cases, we find that the Machine Translation used here provided adequate evidence of Tomofuji's contents because of the simplicity of the technology and the teachings of Tomofuji's figures. It was therefore sufficient to support the examiner's obviousness case.

### CONCLUSION

For the reasons stated above, we *affirm*.

### **AFFIRMED**

### COSTS

No costs.