

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today
(1) was not written for publication in a law journal and
(2) is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte BENJAMIN J. AINSLIE,
DOUGLAS L. WILLIAMS,
GRAEME D. MAXWELL,
RAMAN KASHYAP
and
JONATHAN R. ARMITAGE

Appeal No. 1996-2991
Application 08/302,931¹

HEARD: OCTOBER 5, 1999

Before THOMAS, FLEMING and FRAHM, Administrative Patent Judges.

THOMAS, Administrative Patent Judge.

DECISION ON APPEAL

¹ Application for patent filed September 22, 1994. According to applicants, this application is a National stage application under 35 U.S.C. § 371 of PCT/GB93/01321, filed June 24, 1993.

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U.S.C. § 103 in light of the collective teachings of Legoubin and Farries³.

Rather than repeat the positions of the appellants and the examiner, reference is made to the briefs and the answer for the respective details thereof.

OPINION

Generally for the reasons expressed by appellants in the brief and reply brief, we reverse the rejection of the respective claims under 35 U.S.C. § 102. However, we agree with the examiner's views as to claims 12 through 14 within the rejection of 35 U.S.C. § 103 and extend that rejection under the provisions of 37 CFR § 1.196(b) to claims 10, 11 and 17.

Turning first to the rejection of independent claims 1 and 10 under 35 U.S.C. § 102, as to claim 1, we disagree with the examiner's views and interpret this claim consistent with

³ In light of the examiner's comment at the top of page 4 of the answer that in claims 12-14, the recitation "said reflection waveguide" should be interpreted as "said reflection grating," we have so construed the claim in our deliberations and conclude that such was an inadvertent oversight since the examiner's view is consistent with the other language recited in each of these respective claims.

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appellants' view that the pattern is applied to a glass which contains boron oxide (B_2O_3) and not to some other portion of the glass that does not contain this compound. As to independent claim 10, this claim clearly requires spacially modulating a portion of the recited glass which contains B_2O_3 .

As to the merits of the rejection of these two independent claims under 35 U.S.C. § 102, we note that beginning with the title of the Legoubin's article, the claimed grating is formed in the core of the germanosilicate fiber. Note also the end of the second paragraph at column 2 at page 1945 and the conclusion recited at the middle of the second column at page 1946 of this reference. The teachings of this reference are clear and consistent with appellants' arguments that the core of the fiber is doped with germanium oxide (GeO_2), whereas the cladding is doped with boron (B) in part. Page 1946, column 1, under Experimental results.

Inasmuch as it is clear from the noted teachings in Legoubin that the grating is formed in the core rather than in the cladding, the examiner's views to the contrary notwithstanding, since each independent claim 1 and 10 on appeal requires that the glass contain boron, there can be no

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basis to sustain the rejection under 35 U.S.C. § 102 since each of the claims also requires that the grating be formed in the glass portion containing the boron.

With respect to the examiner's "residual issue" argument bridging the paragraph at pages 8 and 9 of the answer, we observe that the boron is doped in the cladding only of the optical fiber in Legoubin. To the extent that doping is explicitly taught, it is only from the reader's inference that the cladding may be interpreted to be a glass material; as such, we decline to so extend the teaching of this reference to indicate that the cladding is glass in Legoubin. More significantly, however, the earlier noted teaching of Legoubin is that the grating is formed in the core and not the cladding, which would therefore exclude the examiner's reasoning. Therefore, we reverse the rejection of claims 1, 2, 3, 6, 10 and 11 under 35 U.S.C. § 102.

On the other hand, we sustain the § 103 rejection of claims 12-14 in light of the collective teachings of Legoubin and Farries. We do so generally for the reasons expressed by the examiner in the answer. Inasmuch as we extend this rejection to independent claim 10 and its dependent claims 11

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and 17 under the provisions of 37 CFR § 1.196(b) as a new ground of rejection instituted by this panel, the following may be considered as a basis for this rejection.

At the outset, to the extent appellants argue in the reply brief that the Gowar reference, noted by the examiner in passing at the top of page 10 of the answer in the examiner's responsive arguments portion of the answer, is a new reference, any surprise or prejudice to appellants is cured by the examiner's entry of the reply brief.

Appellants do not dispute and there is a clear teaching that Legoubin teaches the formation of the grating which results from spacially modulating the refractive index of the core region; the core of the fiber in Legoubin is formed of germanosilicate glass. In accordance with the description of the prior art in appellants' specification page 1 through line 25 of page 2, it was well known in the art that germanium-doped silica or glass filament material was a photosensitive glass which may be made subject to phase gratings. An apparent limitation of this property was that high power was required to do so as noted at the middle of page 2 of appellants' specification.

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What is significant, however, is what is noted by the examiner in terms of the teachings of Farries, which utilizes a boron and/or boron germanium-doped silica or glass material as a substrate material for the core of the fiber-optic cable therein. Although it may be subject to dispute between the appellants and the examiner as to the nature of the actual gratings formed in Farries, Farries does explicitly teach of the formation of gratings within this boron-doped core region, thus making it analogous to the core region of the admitted prior art of appellants and that of Legoubin.

In contrast to the arguments presented by appellants in the brief and reply brief as to this rejection, it may be true that

the art recognizes, generally speaking, that boron-doped glass is normally used for cladding and that germanium-doped glass is normally used for the core of an optical fiber, it is explicitly taught in Farries that such a boron-doped glass is used as the core material as a modifying agent alone or in addition to germanium-doped glass material to form the core portion of an optical fiber. Based on this teaching alone, as

well as the recognition that gratings were formed in the boron-doped core glass of Farries, it is apparent to us that the art clearly would have recognized quickly the formation of the refractive index patterns by spacially modulating them to form the claimed gratings therein in the manner claimed. Stated differently, the mere presence of the boron in the core material of Farries would not have inhibited the artisan, in our view, from utilizing such a glass for the core portion of an optical fiber, since the teachings in Farries already indicate that the core contains the germanium silica glass which has already been known, in accordance with Legoubin and appellants' admitted prior art in the noted portions of pages 1 and 2 of the specification as filed, to be photosensitive and therefore provide the claimed gratings.

The specific wavelength peaks noted in claims 10, 12 and 13 and the range or band noted at the end of independent claim 14 and dependent claim 11 clearly would have been obvious to the artisan because the prior art recognized such as indicated at page 2 of appellants' specification as filed for germano-silicate glasses.

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As to dependent claim 17, the recitation therein is that the particular mole percentage is recited for the boron oxide to be "at least 2 mole %." Although the boron mole % is not recited in Farries, inasmuch as the actual recited amount in dependent claim 17 is such a low value, any minor doping or any doping at all in Farries obviously would have been at least such a small amount. Appellants have not challenged the examiner's observation at the top of page 11 of the answer that it was well known in the art that normal doping would have exceeded the claimed amount and since the claim only requires the doping to be at least 2 %, we are persuaded of the obviousness of the subject matter of claim 17 on appeal.

As a final matter with respect to appellants' arguments in the brief and reply brief as to this rejection, appellants have presented no evidence that the boron in Farries does not contribute in some manner to the formation of the gratings therein. In any event, we are in agreement with the examiner's general observations at pages 9 and 10 of the answer in response to the appellants' arguments as to this rejection. No matter what may be the proper characterization

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of the gratings formed in Farries, there is a photosensitivity of the core material of the fiber therein, where the fiber core is clearly taught to contain boron.

To the extent appellants' arguments are predicated on the discovery that boron oxide increases or enhances the sensitivity of boron-doped glasses to radiation, the claims do not recite this increased sensitivity. Appellants' claims are much broader in generally attempting to claim boron-doped glass where the reflection gratings therein are due not necessarily to the boron but to the germanium-doped silica or glass material, a feature known in the art. Appellants' feature is indirectly reflected in the table at page 11 of appellants' specification. There it is shown that increased reflectivity of the grating results in accordance with appellants' realization or discovery. What is also argued indirectly is that the input energy required is greatly lessened according to this table, a feature also not recited in any claim on appeal.

We do not extend the rejection under 35 U.S.C. § 103 to independent claim 1 and its respective dependent claims 2, 3, 6, 7 and 16 because this is the only claim on appeal that

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requires that the glass containing the boron oxide is "not dependent on the boron content of the glass." According to appellants' disclosure at the middle of page 3, it was standard practice in the art to prepare optical waveguides by varying the concentration of the dopants radially through the core region. In accordance with the feature of the invention expressed at the top of the page 4 and the top of page 10 of the specification as filed, the claimed refractive index patterns are produced in the invention independently of the boron content of the glass, that is, the glass has a uniform composition of boron. In contrast, none of the applied prior art or appellants assessment of the prior art of the earlier noted specification pages 1 and 2 indicate that it was known in the art that any of the dopants would be uniformly distributed in a manner differently than appellants indicate at page 3 of the specification as filed that the normal practice in the art was not to do so.

In conclusion, we have reversed the stated rejection of various claims under 35 U.S.C. § 102, and have affirmed the rejection of claims 12 through 14 under 35 U.S.C. § 103. We have extended this rejection under the provisions of 37 CFR §

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1.196(b) to independent claim 10 and its dependent claims 11 and 17. Therefore, the decision of the examiner is affirmed-in-part.

In addition to affirming the examiner's rejection of one or more claims, this decision contains a new ground of rejection pursuant to 37 CFR § 1.196(b) (amended effective Dec. 1, 1997, by final rule notice, 62 Fed. Reg. 53,131, 53,197 (Oct. 10, 1997), 1203 Off. Gaz. Pat. & Trademark Office 63, 122 (Oct. 21, 1997)). 37 CFR § 1.196(b) provides, "A new ground of rejection shall not be considered final for purposes of judicial review."

Regarding any affirmed rejection, 37 CFR § 1.197(b) provides:

(b) Appellants may file a single request for rehearing within two months from the date of the original decision

37 CFR § 1.196(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

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ground of rejection to avoid termination of proceedings (37
CFR § 1.197(c)) as to the rejected claims:

(1) Submit an appropriate amendment of the claims so rejected or a showing of facts relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the application will be remanded to the examiner. . . .

(2) Request that the application be reheard under § 1.197(b) by the Board of Patent Appeals and Interferences upon the same record. . . .

Should the appellants elect to prosecute further before the

Primary Examiner pursuant to 37 CFR § 1.196(b)(1), in order to preserve the right to seek review under 35 U.S.C. §§ 141 or 145 with respect to the affirmed rejection, the effective date of the

affirmance is deferred until conclusion of the prosecution before the examiner unless, as a mere incident to the limited prosecution, the affirmed rejection is overcome.

If the appellants elect prosecution before the examiner and this does not result in allowance of the application, abandonment or a second appeal, this case should be returned to the Board of Patent Appeals and Interferences for final action on the affirmed rejection, including any timely request for reconsideration thereof.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

37 CFR § 1.196(b)

	JAMES D. THOMAS)	
	Administrative Patent Judge)	
)	
)	
	MICHAEL R. FLEMING)	BOARD OF
PATENT	Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
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