



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/007,118	07/12/2004	5332981	061094-5004-US	8284
86513	7590	12/13/2010	EXAMINER	
Ward & Olivo LLP 382 Springfiled Avenue Summit, NJ 07901			NGUYEN, MINH T	
			ART UNIT	PAPER NUMBER
			3992	
			MAIL DATE	DELIVERY MODE
			12/13/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte Smiths Interconnect Microwave Components, Inc.
Appellant

Appeal 2010-011799
Reexamination Control 90/007,118
Patent 5,332,981
Technology Center 3900

Before, JAMESON LEE, SALLY C. MEDLEY and KEVIN F. TURNER,
Administrative Patent Judges.

MEDLEY, *Administrative Patent Judge.*

DECISION ON APPEAL¹

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” shown on the PTOL-90A cover letter attached to this decision.

STATEMENT OF THE CASE

Smiths Interconnect Microwave Components, Inc. (“SIMC”), the owner of the patent under reexamination, appeals under 35 U.S.C. §§ 134(b) and 306 from a final rejection of claims 1, 2 and 4-16. We have jurisdiction under 35 U.S.C. §§ 134(b) and 306. Oral argument was held 27 October 2010. We AFFIRM.

BACKGROUND

This reexamination proceeding arose from a third-party request for *ex parte* reexamination, filed by C. Bruce Hamburg (Request for Ex Parte Reexamination, filed 12 Jul. 2004). Patent 5,332,981 issued with 13 claims. SIMC amended claims 1, 4 and 7, cancelled claim 3, and added claims 14-16.

SIMC’s invention is related to an attenuator that includes first and second film resistors each having different temperature coefficients of resistance such that the attenuation changes with temperature at a controlled rate while the impedance of the attenuator remains the same. Col. 1, ll. 48-55; col. 2, ll. 18-25; figs. 2-4.

The subject matter of the appealed claims is illustrated by claim 1 (underlining and brackets removed) which defines the invention as:

1. A temperature variable microwave attenuator comprised of at least first and second film resistors, said first resistor having temperature coefficient of resistance which is different from the temperature coefficient of resistance of said second resistor, the temperature coefficients of said resistors being such that the attenuation of said attenuator changes at a controlled rate with changes in the ambient temperature but wherein the impedance of said attenuator remains substantially constant as said attenuation changes.

The Examiner relies on the following prior art references:

“JP ‘405”	JP 3-115405	28 Nov. 1991
Masataka et al. (“Masataka”)	JP 02-034013	05 Feb. 1990
Brininstool	4,685,799	11 Aug. 1987
Praria	4,475,099	02 Oct. 1984
Nakamura et al. (“Nakamura”)	4,260,965	07 Apr. 1981
Pye	3,680,013	25 Jul. 1972

SIMC appeals the following rejections under 35 U.S.C. § 102(b):

- claims 7-9 and 12 as anticipated by Masataka;
- claims 7-9, 12 and 13 as anticipated by JP ‘405.

SIMC appeals the following rejections under 35 U.S.C. § 103(a):

- claims 1, 2, 5 and 10 as unpatentable over Masataka and Pye;
- claims 4 and 11 as unpatentable over Masataka, Pye and Praria;
- claims 6 and 13 as unpatentable over Masataka and Brininstool;
- claims 14-16 as unpatentable over Nakamura and Masataka;
- claims 1, 2, 5, 6 and 10 as unpatentable over JP ‘405 and Pye;
- claims 4 and 11 as unpatentable over JP ‘405, Pye and Praria;
- claims 14-16 as unpatentable over Nakamura and JP ‘405.

ISSUES

1. Did the Examiner incorrectly find that Masataka and JP ‘405 describe means for changing the attenuation with changes in ambient temperature?
2. Did the Examiner incorrectly determine that the claims are prima facie obvious over the applied prior art and incorrectly accord appropriate weight to evidence of secondary considerations?

FINDINGS OF FACT

Masataka

1. Masataka describes a temperature compensation circuit including a negative temperature coefficient resistor and a positive temperature coefficient resistor. Masataka² p. 8, l. 2-p. 9, l. 3; p. 11, l. 3-p. 13, l. 8; figs. 1, 6, 7; Abs.³ ll. 10-12.
2. When the circuit is used with a coaxial cable whose attenuation is reduced as the temperature decreases and whose attenuation is increased as the temperature increases, the transmission signal level is made constant independent of a temperature change. Abs. ll. 16-17.

JP '405

3. JP '405 describes an attenuator including a resistor having a negative temperature coefficient and a resistor having a positive temperature coefficient. JP '405⁴ p. 2, ll. 2-12.

Pye

4. Pye describes that it is known that attenuators may be manufactured by flat film techniques whereby thick or thin film resistor elements and conductors are deposited on flat substrates. Col. 1, ll. 47-53.
5. It is well known that the high frequency performance of known flat film attenuators is superior to that of attenuators comprising discrete resistors as a result of the reduction of inductance and reactance. Col. 8, ll. 22-29.

² Refers to the English Translation of Masataka.

³ Refers to the Abstract from the Patent Abstracts of Japan.

⁴ Refers to the English Translation of JP '405.

6. Attenuators produced by flat film techniques suffer from the disadvantage that the adjustment of the resistance values of individual film resistors has to be carried out on a network of deposited resistor films. Col. 1, ll. 55-59.
7. Since measurements are normally made across the input or output terminations of the attenuator it is difficult to adjust the value of a single resistor because the presence of more than one resistor causes confusion. Col. 1, ll. 59-63.
8. Another disadvantage is that if one of the first resistors in an attenuator is incorrectly adjusted, the other resistors may have to be adjusted to values that are not optimal for the deposited film as it was originally designed. Col. 1, ll. 69-73.
9. Pye describes that to overcome the disadvantages of plural film resistors, a single film resistive element is divided into at least three distinct resistive element portions which are capable of having their resistance values adjusted. Col. 3, ll. 26-40; col. 3, l. 51-col. 4, l. 12; col. 4, ll. 63-75; col. 6, l. 70-col. 7, l. 13; col. 7, ll. 47-70; figs 3a-3d, 4a-4d.

Nakamura

10. Nakamura describes attenuators with plural resistance films that operate in the microwave frequency range. Col. 1, ll. 11-20; col. 2, ll. 30-48; figs. 1, 2a, 2b.

Brininstool

11. Brininstool describes an insertion loss measurement system for evaluating environmental effects of a test fiberoptic cable and describes a test result in which the cable exhibits a decrease in

attenuation with increasing temperature up to roughly 75⁰ where a minimum occurs. Col. 8, ll. 42-44; fig. 5.

ANALYSIS

Anticipation – claims 7-9, 12 and 13

Claims 7-9 and 12 are rejected as anticipated by Masataka and claims 7-9, 12 and 13 are rejected as anticipated by JP ‘405. The separate rejections are addressed together since the issue before us is the claim construction of independent claim 7. Independent claim 7 recites: “means for changing the attenuation of said attenuator with changes in ambient temperature, said means including said first resistor having a temperature coefficient of resistance which is different from the temperature coefficient of resistance of said second resistor”

The Examiner finds that the aforementioned claim recitation does not invoke 35 U.S.C. § 112, 6th paragraph because the means is modified by sufficient structure for achieving the function. Ans.⁵ 35. The Examiner identifies the “means including said first resistor having a temperature coefficient of resistance which is different from the temperature coefficient of resistance of said second resistor” recited in claim 7 as the sufficient structure for performing the function. Ans. 36. The Examiner finds that both Masataka and JP ‘405 describe means including a first resistor having a negative temperature coefficient of resistance and a second resistor having a positive temperature coefficient of resistance. Ans. 6-9, citing Masataka Abs. ll. 10-12, citing JP ‘405 p. 2, ll. 14-15; fig. 4.

⁵The Supplemental Answer mailed 04 Jun. 2010 is considered and referred to hereinafter.

SIMC argues that claim 7 and claims dependent therefrom include 35 U.S.C. § 112, 6th paragraph means-plus-function limitations. App. Br.⁶ 6, 24. SIMC identifies the structure corresponding to the function as including film resistors R1, R2, R3, where at least two of the resistors are required to have different thermal coefficients of resistance as depicted in figure 4. App. Br. 24. SIMC argues that neither Masataka nor JP '405 disclose the use of film resistors and do not suggest at least two film resistors with different temperature coefficients of resistance. App. Br. 24-25.

Where a claim contains a “means” and recites a function but recites sufficient structure within the claim itself to perform entirely the recited function, the claim is not in means-plus-function format. *Envirco Corp. v. Clestra Cleanroom, Inc.*, 209 F.3d 1360, 1364-65 (Fed. Cir. 2000); *Sage Prods., Inc. v. Devon Indus. Inc.*, 126 F.3d 1420, 1427-28 (Fed. Cir. 1997). Claim 7 describes that the “means includ[es] said first resistor having a temperature coefficient of resistance which is different from the temperature coefficient of resistance of said second resistor” which is sufficient structure for performing the function of “changing the attenuation of said attenuator with changes in ambient temperature”. Contrary to SIMC’s arguments, claim 7 does not require the resistors to be film resistors because resistors in general (i.e., non-film resistors and film resistors) are sufficient structure for performing entirely the function of changing the attenuation of the attenuator with changes in ambient temperature. Since claim 7 recites sufficient structure to perform entirely the recited function, claim 7 is not in means-plus-function format. Accordingly, the Examiner correctly determined that

⁶The Amended Appeal Brief most recently filed on 25 Jan. 2010 is the Appeal Brief that is considered and referred to hereinafter.

Appeal 2010-011799
Reexamination Control 90/007,118
Patent 5,332,981

claim 7 does not invoke 35 U.S.C. § 112, 6th paragraph. SIMC does not argue for the separately patentability of dependent claims 8, 9, 12 and 13. App. Br. 24-25.

For all these reasons, we sustain the rejections of claims 7-9 and 12 as anticipated by Masataka and claims 7-9, 12 and 13 as anticipated by JP '405. Obviousness – claims 1, 2, 5 and 10 over Masataka and Pye and claims 1, 2, 5, 6 and 10 over JP' 405 and Pye

Independent claim 1 recites: “[a] temperature variable microwave attenuator comprised of at least first and second film resistors, said first resistor having temperature coefficient of resistance which is different from the temperature coefficient of resistance of said second resistor”

Scope and content of the prior art

Masataka

The Examiner finds that Masataka describes a temperature variable microwave attenuator including a first resistor having a negative temperature coefficient of resistance and a second resistor having a positive temperature coefficient of resistance. Ans. 10-11, citing Abs. ll. 4-6, 10-12; fig 1a.

JP' 405

The Examiner finds that JP '405 describes a variable microwave attenuator including a first and second resistor having positive and negative temperature coefficient resistances. Ans. 18-19, citing JP '405 p. 1, l. 6; p.2, ll. 14-15; fig. 2.

Pye

The Examiner finds that Pye describes the use of film techniques for manufacturing an attenuator which results in an attenuator with superior

Appeal 2010-011799
Reexamination Control 90/007,118
Patent 5,332,981

high frequency performance compared to the use of discrete resistors. Ans. 10-11, 18-19, citing col. 1, ll. 49-52; col. 8, ll. 22-25.

SIMC argues that the applied prior art does not describe microwave attenuators, but instead describes high frequency attenuators that are in the 3-30 Megahertz range which is different from microwave attenuators that are in the Gigahertz frequency range. App. Br. 10-11, citing IEEE Standard Dictionary of Electrical and Electronics Terms, 5th Ed. p. 807 (1993); Newton's Telecom Dictionary, 16th Ed. p. 539 (2000). The Examiner finds that "microwave" is not entitled to patentable weight because it is recited in the preamble and does not impart any structural limitations that distinguish the claimed structure from those of the applied prior art. Ans. 28.

When the body of the claim defines a structurally complete invention and the preamble only states a purpose or intended use, the preamble does not constitute a claim limitation. *Rowe v. Dror*, 112 F.3d 473, 478 (Fed. Cir. 1997). In this case, the body of claim 7 recites a structurally complete invention, i.e., first and second film resistors with different temperature coefficients of resistance. The preamble merely states the intended purpose or use for the claimed invention, i.e., for microwave attenuation. While SIMC's Specification discloses that the claimed structure is used for attenuating microwave frequency electromagnetic energy, we are unpersuaded that the recitation of "microwave" in the preamble distinguishes the structure of the claimed invention from the applied prior art.

In any event, to the extent that "microwave" is entitled to patentable weight, the Examiner finds that the prior art attenuators can function as a microwave attenuator since there is no structural difference between the

Appeal 2010-011799
Reexamination Control 90/007,118
Patent 5,332,981

claimed attenuator and the applied prior art. Ans. 28. The Examiner also finds that a person of ordinary skill in the art at the time of the invention would have known that the prior art high frequency attenuators were capable of functioning in the microwave frequency range. Ans. 29.

SIMC's arguments that the Examiner's findings and determinations are based on hindsight (App. Br. 11) are conclusory and unpersuasive. SIMC's arguments do not cogently explain why the prior art high frequency attenuators either alone or as combined by the Examiner would be incapable of operating in the microwave frequency range. Nor does SIMC provide a meaningful explanation why one with ordinary skill in the art at the time the invention was made would not have recognized that the prior art high frequency attenuators either alone or as combined by the Examiner were capable of functioning in the microwave frequency range. We have considered SIMC's argument that Masataka's teachings are limited to a frequency up to only 500 MHz based on the frequencies depicted in figure 6. The argument is unpersuasive because it focuses too narrowly on the specific teachings of Masataka. The intended use of Masataka's device need not be preserved as SIMC suggests. Rather "[a] reference must be considered for everything it teaches by way of technology and is not limited to the particular invention it is describing and attempting to protect." *EWP Corp. v. Reliance Universal Inc.*, 755 F.2d 898, 907 (Fed. Cir. 1985) (emphasis omitted). At the time the invention was made one with ordinary skill in the art would have recognized that the prior art high frequency attenuators either alone or as combined by the Examiner can be utilized for attenuating high frequencies including those beyond what is depicted in Masataka's figure and including microwave frequencies. A person of

Appeal 2010-011799
Reexamination Control 90/007,118
Patent 5,332,981

ordinary skill is a person of ordinary creativity, not an automaton. *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007).

We further note that Nakamura's description of a similar attenuator having plural resistance films that operates in the microwave frequency range is record evidence that demonstrates that one with ordinary skill in the art at the time the invention was made would have recognized that the prior art high frequency attenuators with similar structure, either alone or as combined by the Examiner, were capable of functioning in the microwave frequency range. Col. 1, ll. 11-20. During oral argument, when asked whether SIMC provided evidence that the prior art relied upon by the Examiner would not function in the microwave frequency range, Mr. Morris, counsel for SIMC indicated that they did not provide such evidence. Oral Arg. Rec. p. 9, ll. 3-12. For all of the above reasons, the Examiner's determination that one of ordinary skill in the art would have recognized that the prior art high frequency attenuators can be utilized for attenuating microwave frequencies is reasonable. SIMC has not directed us to supporting evidence to the contrary.

Differences between the prior art and the claimed invention

The Examiner finds that neither Masataka nor JP '405 describes the use of film techniques for the attenuator. Ans. 11, 19.

Level of ordinary skill in the art

Neither SIMC nor the Examiner has addressed the level of ordinary skill in the art. A "person of ordinary skill in the art is a hypothetical person who is presumed to know the relevant prior art." *In re GPAC*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citation omitted). Accordingly, we consider the cited

Appeal 2010-011799
Reexamination Control 90/007,118
Patent 5,332,981

prior art as representative of the level of ordinary skill in the art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

Prima facie case

In view of the underlying factual inquiries discussed before, we review the prima facie case of obviousness.

The Examiner determined that it would have been obvious to one with ordinary skill in the art at the time the invention was made to use film techniques as taught by Pye to implement the resistors in either Masataka's attenuator or the JP '405 attenuator in order to improve the high frequency performance of either the Masataka or JP '405 attenuator as taught by Pye. Ans. 11, 19.

SIMC argues that Pye teaches away from combining film elements with multiple discrete resistor components having different temperature coefficients of resistance. App. Br. 12. SIMC asserts that Pye rejects the use of plural film elements and teaches a single film resistive element having only one thermal coefficient of resistance as a solution to the disadvantages of plural film elements. App. Br. 8-10, 12, citing Pye col. 1, l. 57-col. 2, l.3; col. 3, ll. 51-54.

SIMC's arguments are misplaced because the Examiner does not rely on Pye for teaching plural film resistor elements. Instead, the Examiner relies on either Masataka or JP '405 for teaching plural resistor elements and relies on Pye for teaching that it is known to use film resistor elements instead of discrete resistor elements. Ans. 11, 19. SIMC's arguments are also misplaced because they narrowly focus on Pye's description of a single film resistive element while discounting Pye's description of overcoming the disadvantages of plural film resistors by dividing up the single film resistive

Appeal 2010-011799
Reexamination Control 90/007,118
Patent 5,332,981

element into at least three distinct resistive element portions with adjustable resistance values. Col. 3, ll. 26-40; col. 3, l. 51-col. 4, l. 12; col. 4, ll. 63-75; col. 6, l. 70-col. 7, l. 13; col. 7, ll. 47-70; figs 3a-3d, 4a-4d. Pye's teaching of dividing up the single film resistive element into at least three distinct resistive element portions with adjustable resistance values is consistent with using first, second and third film resistors with different resistance values.

Finally, Pye's description of using a single film resistive element as an alternative to the use of plural film resistor elements does not provide a teaching away since a teaching of something different does not constitute a teaching away. *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004) ("The prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed."). SIMC does not otherwise direct us to, and we can not find, where Pye criticizes, discredits or discourages the use of first and second film resistors having different temperature coefficients of resistance.

For these same reasons, we find equally unpersuasive SIMC's arguments that: (1) the references do not teach all of the claim limitations because Pye's teaching of one resistive element conflicts with Masataka's or the JP '405 teachings of plural resistive elements; and (2) there is no suggestion in the cited references to combine the references and no reasonable expectation that the teachings can be combined because Pye teaches away. App. Br. 10-12.

For all these reasons, the Examiner has not incorrectly determined that claims 1, 2, 5 and 10 are prima facie obvious over Masataka and Pye and claims 1, 2, 5, 6 and 10 are prima facie obvious over JP '405 and Pye.

Appeal 2010-011799
Reexamination Control 90/007,118
Patent 5,332,981

Secondary Considerations

Secondary considerations may include any of the following: long-felt but unsolved needs, failure of others, unexpected results, commercial success, copying, licensing, and praise. SIMC argues commercial success, copying and long-felt need. App. Br. 12-19; Reply Br. 2-9; Second Reply Br. 2-4. We recognize that evidence of secondary considerations must always be considered en route to the determination of obviousness, but its existence alone does not control the conclusion of obviousness. *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1538 (Fed. Cir. 1983); *Richardson-Vicks Inc. v. Upjohn Co.*, 122 F.3d 1476, 1483 (Fed. Cir. 1997) (citations omitted). In order to be accorded substantial weight, there must be a nexus between the merits of the claimed invention and the evidence of secondary considerations. *Stratoflex*, 713 F.2d at 1539; *In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996); *In re GPAC Inc.*, 57 F.3d 1573, 1580 (Fed. Cir. 1995). A “nexus” is a legally and factually sufficient connection between the objective evidence and the claimed invention such that the objective evidence should be considered in the determination of obviousness. *In re Paulsen*, 30 F.3d 1475, 1482 (Fed. Cir. 1994). The burden of showing that there is a nexus lies with the patent owner. *Id.* It is also well settled that evidence of secondary considerations must be commensurate in scope with the claims in which the evidence is offered to support. *In re Grasselli*, 713 F.2d 731, 743 (Fed. Cir. 1983).

The claimed invention, as illustrated by claim 1, is an attenuator including first and second film resistors having different temperature coefficients of resistance such that the attenuation changes at a controlled rate with temperature changes but the impedance remains constant.

Commercial success

SIMC argues that its invention has achieved substantial commercial success and directs attention to a first Declaration of Mark Harrison, Vice President of Finance of SIMC, who states that over 10,000,000 Thermopad® temperature variable attenuators have been sold since 1994 and the sales have good profit margins. App. Br. 14-15; Reply Br. 3; Harrison Dec. 1⁷ ¶¶ 5-7. In support of its arguments, SIMC also directs attention to a second Declaration of Mark Harrison in which Harrison states that: (1) from 1994-2002 the Thermopad® surface mountable temperature variable attenuator had a 100% worldwide market share and was the only commercial surface mountable temperature variable attenuator sold in the world; (2) since 2002, SIMC continues to have 100% of the market share for commercial surface mountable temperature variable attenuators in the United States and has 80% market share in Europe and approximately 50% market share in Asia; (3) numerous customers have acknowledged to SIMC that SIMC and its predecessors are the sole supplier of surface mounted temperature variable attenuators in the U.S.; and (4) SIMC is the only company in the world whose surface mounted temperature variable attenuators have been certified for U.S. and NATO military and space applications. Second Reply Br. 2-3; Harrison Dec. 2⁸ ¶¶ 4-8.

SIMC directs attention to case law for holding that a prima facie case of a nexus is made out when the patentee shows both commercial success and that the product that is commercially successful is the invention disclosed and claimed in the patent. App. Br. 14; Reply Br. 3; Second Reply

⁷ Refers to the first Harrison Declaration filed 15 May 2006.

⁸ Refers to the second Harrison Declaration filed 04 August 2008.

Appeal 2010-011799
Reexamination Control 90/007,118
Patent 5,332,981

Br. 3, citing *J.T. Eaton & Co. v. Atlantic Paste and Glue Co.*, 106 F.3d 1563 (Fed. Cir. 1997) and *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988). On this basis, SIMC asserts that it has demonstrated the requisite nexus because it has shown commercial success and because the Thermopad® temperature variable attenuator described in its evidence is the product disclosed and claimed in the '981 Patent. App. Br. 14-18; Reply Br. 3-6; Second Reply Br. 3; Morris Dec. 2⁹ ¶ 6, Exhibit B; Fejzuli Dec. ¶ 5.

SIMC's arguments are misplaced because the concept of "prima facie case of nexus" set out in *Eaton* and *Demaco* is limited to civil litigation and does not extend to ex parte proceedings before the USPTO. *Ex parte Remark*, 15 USPQ2d 1498, 1502-03 (BPAI 1990). In civil litigation, once a prima facie nexus is demonstrated the burden switches to the opposing party to show that commercial success was due to extraneous reasons, while in ex parte proceedings the USPTO lacks the evidentiary means to show that commercial success is due to reasons other than the merits of the claimed invention. *Id.*

The evidence to which SIMC directs us may provide a general connection between its asserted commercial success and the Thermopad® product said to comprise three film resistors at least two of which have different temperature coefficients of resistance that are selected so that the attenuation changes at a controlled rate with changes in ambient temperature while the impedance of the attenuator remains substantially constant. Harrison Dec. 1 ¶¶ 4-7; Harrison Dec. 2 ¶¶ 3-8; Fejzuli Dec. ¶¶ 3-6).

⁹ Refers to the second Morris Declaration filed 27 November 2006

Appeal 2010-011799
Reexamination Control 90/007,118
Patent 5,332,981

However, commercial success is relevant only if there is proof that the sales were a direct result of the unique characteristics of the claimed invention beyond what was available in the prior art and not attributable to other economic and commercial factors unrelated to the quality of the patented subject matter. *Huang*, 100 F.3d at 140; *Eaton*, 106 F.3d at 1571. After consideration of the evidence to which SIMC directs us, it remains unclear whether the 10 million sales of the Thermopad® product and/or good profit margins is due to the unique characteristics of the claimed invention, beyond what was available in the prior art or whether the asserted commercial success is due to other economic and commercial factors, e.g., attractive pricing, volume discounts, goodwill, etc.

In any event, even if SIMC demonstrated a nexus between its evidence of commercial success and the unique characteristics of the claimed invention, SIMC's showing is deficient because it does not provide adequate information necessary to assess whether 10 million sales of the Thermopad® product represents a substantial quantity in the relevant market. *Huang*, 100 F.3d at 140; *Cable Elec. Prods., Inc., v. Genmark Inc.*, 770 F.2d. 1015, 1026-27 (Fed. Cir. 1985) (overruled on other grounds). SIMC presents evidence of market share in the context of a narrowly defined market, i.e., commercial surface mountable temperature variable attenuators. Second Reply Br. 2-3; Harrison Dec. 2 ¶¶ 4-7. We do not give substantial weight to SIMC's evidence that the relevant market is confined to commercial surface mountable temperature variable attenuators. SIMC does not provide a credible factual basis for defining the relevant market so narrowly. Thus, such a narrowly defined market does not provide an appropriate context for assessing whether 10 million sales constitutes

Appeal 2010-011799
Reexamination Control 90/007,118
Patent 5,332,981

commercial success. A more appropriate context for the sales could be established if, for example, SIMC provided an indication of its share in the overall attenuator market or the overall temperature variable attenuator market along with providing the size of these markets. Perhaps the relevant market could even be characterized as “telecommunications”, “applications involving telecommunications” or “circuits where temperature issues are a problem”. Oral Arg. Rec. p. 13, ll. 20-23; p. 16, ll. 8-9. Since SIMC does not sufficiently account for an appropriate indication of the relevant market and its size, it is unclear whether the sale of 10 million Thermopad® products represents a significant share of that market. For example, if the overall market for temperature variable attenuators was 25 million during the same time span, SIMC’s 10 million sales may be significant and indicative of commercial success. On the other hand, SIMC’s 10 million sales may not be significant if the market was 150 million.

Along these same lines, information related to whether and how much SIMC’s sales came at the expense of available prior art attenuators would have been helpful for providing an appropriate context for determining commercial success. *Remark*, 15 USPQ2d at 1505; *Kansas Jack, Inc. v. Kuhn*, 719 F.2d 1144, 1150 (Fed. Cir. 1983). Before SIMC’s Thermopad® product became available, attenuators and other temperature variable attenuators were most likely used, for example, in U.S. and NATO military and space applications.

In the absence of further economic evidence to provide the appropriate context for assessing commercial success, it would be improper to infer that SIMC’s sales represented a substantial share of the relevant

Appeal 2010-011799
Reexamination Control 90/007,118
Patent 5,332,981

market. *Remark*, 15 USPQ2d at 1505; *Cable Elec. Products*, 770 F.2d. at 1026-27.

Copying

SIMC argues that two infringement suits filed by the patent owner against Methode Electronics et al. (“Methode”) and Susumu Co. Ltd., et al. (“Susumu”) demonstrate that the invention was copied by others. App. Br. 18; Reply Br. 8. SIMC argues that Methode’s temperature variable attenuator is substantially the same as the SIMC Thermopad® temperature variable attenuator and was the subject of an infringement suit dismissed with prejudice. App Br. 19, Reply Br. 8-9; Morris Dec. 2 Exhibits A and B. SIMC also argues that Susumu’s website said to indicate that its thermal sensitive attenuator is not for shipment to or sale in the United States is indicative of copying. App. Br. 19; Reply Br. 9; Morris Dec. 1¹⁰ Exhibit.

SIMC’s arguments and supporting evidence are not factually sufficient to show that the claimed invention was copied by others because infringement suits alone do not constitute evidence of copying. *Iron Grip Barbell Co., Inc. v. USA Sports Inc.*, 392 F.3d 1317, 1325 (Fed. Cir. 2004). If this were the case, every infringement suit would automatically confirm the non-obviousness of the claimed invention. *Id.* Instead, copying requires the replication of the claimed product. *Iron Grip Barbell*, 392 F.3d at 1325. Replication can be demonstrated through internal documents, direct evidence such as disassembling a patented prototype, photographing its features, and using the photograph as a blueprint to build a virtually identical replica or access to, and substantial similarity to the patented product. *Id.*,

¹⁰ Refers to the first Morris Declaration filed 15 May 2006.

(citations omitted). Here, SIMC does not direct us to objective evidence to demonstrate that Methode or Susumu replicated SIMC's claimed attenuator.

Moreover, SIMC does not demonstrate a nexus between what was allegedly copied and the claimed invention because the evidence to which SIMC directs us is not commensurate in scope with the claimed invention. SIMC's evidence includes a photograph of Methode's allegedly copied product, which is described in the caption as constructed on an alumina substrate with thick film silver terminations and includes thick film thermistors encapsulated with low temperature glass. Morris Dec. 2 Exhibit A. The photograph from Exhibit A does not provide any indication that the resistors have different coefficients of resistance. Therefore, SIMC's evidence does not sufficiently demonstrate that Methode's product includes first and second film resistors having different temperature coefficients of resistance as required by claim 1. Morris Dec. 2 Exhibit A. SIMC also directs us to evidence that includes a copy of a page downloaded from Susumu's website captioned "P*V series, thermal sensitive chip attenuators" which depicts the dimensions of two available attenuator models and includes a table of various electrical characteristics for each model. Morris Dec. 1 Exhibit. The copy of the page downloaded from Susumu's website does not provide any indication of first and second resistors or that the first and second resistors are film resistors. Accordingly, SIMC's evidence does not sufficiently demonstrate that Susumu's product is an attenuator that includes first and second film resistors and further that the resistors have different temperature coefficients of resistance as required by claim 1.

Long-felt need

Appeal 2010-011799
Reexamination Control 90/007,118
Patent 5,332,981

SIMC argues that its patent satisfies a long-felt need because despite nearly 28 years difference between the filing of the application that issued as Patent 3,227,975 and the filing of SIMC's patent application, a temperature variable microwave attenuator having film elements has not been described in the prior art. App. Br. 19-20; Reply Br. 7-8; Second Reply Br. 3-4.

SIMC's arguments are unpersuasive. Without a showing of long-felt need, the mere passage of time without the claimed invention cannot substitute for objective evidence of non-obviousness. *In re Khan*, 441 F.3d 977, 990-991 (Fed. Cir. 2006) (citations omitted). In order to show a long-felt but unmet need for the claimed invention, the objective evidence must show that the need was a persistent one that was recognized by those of ordinary skill in the art. *In re Gershon*, 372 F.2d 535, 538 (CCPA 1967). SIMC does not direct us to objective evidence to demonstrate that those with ordinary skill in the art recognized a persistent need for the claimed invention, i.e., an attenuator with first and second film resistors having different temperature coefficients of resistance.

Conclusion of Obviousness/Non-Obviousness

We have carefully weighed and evaluated the evidence supporting obviousness and the objective evidence of non-obviousness provided by SIMC. Upon careful consideration of the evidence as a whole, and weighing it anew, the evidence supporting the conclusion of obviousness outweighs the evidence of non-obviousness. For these reasons, we sustain the rejections of claims 1, 2, 5 and 10 as obvious over Masataka and Pye and claims 1, 2, 5, 6 and 10 as obvious over JP '405 and Pye.

Appeal 2010-011799
Reexamination Control 90/007,118
Patent 5,332,981

Obviousness - claims 4 and 11 over Masataka, Pye and Praria and over JP '405, Pye and Praria

Claims 4 and 11 depend from claims 1 and 10, respectively. SIMC does not separately argue the limitations of claims 4 and 11, but instead argues that Praria does not make up for the deficiencies of the applied prior art. App. Br. 21. For the same reasons as explained before with respect to claims 1, 2, 5, 6 and 10, we sustain the rejections of claims 4 and 11 as obvious over Masataka, Pye and Praria and obvious over JP '405, Pye and Praria.

Obviousness – claim 6 over Masataka and Brininstool

Claim 6 depends from and includes all of the limitations of claim 1. SIMC's arguments that neither Masataka nor Brininstool describe first and second film resistors as required by claim 1 (App. Br. 22) are persuasive. The Examiner does not direct us to, and we can not find, where either Masataka or Brininstool describe film resistors. Ans. 14. Accordingly, we do not sustain the rejection of claim 6 as obvious over Masataka and Brininstool.

Obviousness – claim 13 over Masataka and Brininstool

Claim 13 ultimately depends from independent claim 7. SIMC's argument that neither Masataka nor Brininstool describe first and second film resistors (App. Br. 22-23) are unpersuasive because the argument is not commensurate in scope with the claim limitations. As previously explained in addressing independent claim 7, the resistors need not be film resistors because sufficient structure (i.e., first and second resistors having different temperature coefficients of resistance) is recited in claim 7 to perform

Appeal 2010-011799
Reexamination Control 90/007,118
Patent 5,332,981

entirely the function of changing the attenuation of the attenuator with changes in ambient temperature.

Claim 13 further recites that the “attenuator has a positive temperature coefficient of attenuation.” The Examiner finds that Masataka describes an attenuator that is designed to have a negative temperature coefficient of attenuation because the attenuator is used in cables where the attenuation is reduced as the temperature decreases and the attenuation is increased as the temperature increases. Ans. 14, citing Masataka Abs. ll. 16-17. The Examiner does not rely on Masataka for describing a positive temperature coefficient of attenuation, instead finding that Brininstool describes a cable which has characteristics in which attenuation increases as the temperature decreases and is reduced as the temperature increases. Ans. 14, citing col. 8, ll. 42-44. The Examiner determined that it would have been obvious to one with ordinary skill in the art the time the invention was made to design Masataka's attenuator to have a positive temperature coefficient of attenuation so that it could be used in an environment in which the attenuation of the cables is increased as the temperature decreases and the attenuation is reduced as the temperature increases. Ans. 14.

SIMC argues that there is no suggestion in Masataka, Brininstool or elsewhere to combine the references. SIMC's argument is of no consequence since it is not necessary to find precise teachings in the prior art directed to the specific subject matter claimed because inferences and creative steps that a person of ordinary skill in the art would employ can be taken into account. *KSR*, 550 U.S. at 418. A person of ordinary skill is a person of ordinary creativity, not an automaton. *Id.* at 421. SIMC does not otherwise persuasively argue nor direct us to objective evidence that

Appeal 2010-011799
Reexamination Control 90/007,118
Patent 5,332,981

demonstrates that it would not have been obvious to one with ordinary skill in the art at the time the invention was made to modify Masataka's attenuator to have a positive temperature coefficient of attenuation for the purpose of using the attenuator in an environment in which the attenuation is increased as the temperature decreases and reduced as the temperature increases. Ans. 14.

For these reasons in addition to those addressed before with respect to claim 7, we sustain the rejection of claim 13 as obvious over Masataka and Brininstool.

Obviousness – claims 14-16 over Nakamura and Masataka and over Nakamura and JP' 405

Independent claim 14 recites: an “attenuator comprising at least first, second and third film resistors, the first resistor having a temperature coefficient of resistance which is different from the temperature coefficient of resistance of the second resistor”

The Examiner finds that Nakamura describes first, second and third film resistors but does not describe a first and second resistor having different temperature coefficients of resistance. Ans. 15, 22. The Examiner relies on Masataka and JP '405 each for teaching first and second resistors having different temperature coefficients of resistance such that the attenuation changes at a controlled rate with changes in the ambient temperature but the impedance remains substantially constant. Ans. 16, 23. The Examiner determined that it would have obvious to one skilled in the art at the time of the invention was made to modify Nakamura's attenuator to include first and second resistors having different temperature coefficients of resistance as taught by both Masataka and JP '405 in order to ensure that the

Appeal 2010-011799
Reexamination Control 90/007,118
Patent 5,332,981

impedance of the attenuator remains constant regardless of changes in temperature. Ans. 16-17, 23-24.

SIMC argues that claim 14 is patentable for the same reasons that claim 1 is patentable, including the objective considerations. App. Br. 23-24. Without further explanation, SIMC argues that neither Nakamura nor Masataka and neither Nakamura nor JP '405 suggest a temperature variable attenuator having at least three film resistors where a first film resistor has a TCR (thermal coefficient of resistance) that is different from the TCR of a second film resistor. App. Br. 23-24. SIMC's arguments are unpersuasive because they address the Nakamura, Masataka and JP '405 references separately rather than addressing the combined teachings of Nakamura and Masataka or Nakamura and JP '405. The Examiner's determination of obviousness is based on the combined teachings of the references. Non-obviousness can not be shown by attacking references individually where the rejections are based on combinations of references. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Circ. 1986); *In re Keller*, 642 F.2d 413, 426 (CCPA 1981). SIMC does not otherwise persuasively argue nor direct us to objective evidence that demonstrates that it would not have been obvious to one with ordinary skill in the art at the time the invention was made to modify Nakamura's attenuator to include first and second resistors having different temperature coefficients of resistance as taught by both Masataka and JP '405.

For these reasons, in addition to the reasons explained before with respect to the rejections of claims 1, 2, 5 and 10 over Masataka and Pye and claims 1, 2, 5, 6 and 10 over JP' 405 and Pye, the Examiner has not incorrectly determined that claims 14-16 are prima facie obvious over

Appeal 2010-011799
Reexamination Control 90/007,118
Patent 5,332,981

Nakamura and Masataka and prima facie obvious over Nakamura and JP '405.

Secondary Considerations

SIMC argues that because claim 14 recites additional physical structure of the Thermopad® attenuator the same objective considerations apply to claim 14 as those that apply to claim 1. App. Br. 23. Particularly relevant to the structure recited in claim 14, the Thermopad® temperature variable attenuator is said to comprise three film resistors at least two of which have different temperature coefficients of resistance that are selected so that the attenuation of the attenuator changes at a controlled rate with changes in ambient temperature while the impedance of the attenuator remains substantially constant. Fejzuli Dec. ¶ 5. The Thermopad® attenuator is also said to include an insulating substrate, first and second input terminals on a first surface of the substrate and first and second output terminals on the first surface of the substrate with the film resistors being formed in a T or π configuration on the substrate and connected between the input and output terminals. Fejzuli Dec. ¶ 6.

We have again considered SIMC's evidence of commercial success in light of the additional structure recited in claim 14. While SIMC has arguably demonstrated that the Thermopad® product sold is commensurate in scope with the invention of claim 14, for the same reasons explained before, SIMC's arguments that it has demonstrated a "prima facie case of nexus" are unpersuasive. *Remark*, 15 USPQ2d at 1502-03. SIMC has not shown a sufficient nexus between its evidence of commercial success and the unique characteristics of the claimed invention, because as explained before, it remains unclear whether the 10 million sales of the Thermopad®

Appeal 2010-011799
Reexamination Control 90/007,118
Patent 5,332,981

product and/or good profit margins is due to the unique characteristics of the claimed invention rather than due to other economic and commercial factors.

Even if SIMC had demonstrated a nexus between its evidence of commercial success and the unique characteristics of the claimed invention, for the same reasons explained before, SIMC's showing of commercial success is deficient. We do not give substantial weight to SIMC's evidence that the relevant market is narrowly defined as "commercial surface mountable temperature variable attenuators" as explained before.

Accordingly, there is insufficient evidence for us to ascertain whether the sale of 10 million Thermopad® products represents a substantial quantity in the appropriate relevant market. In the absence of additional economic evidence providing the appropriate context for assessing commercial success, it would be improper to infer that SIMC's sales represented a substantial share of the relevant market.

We have again carefully weighed and evaluated the evidence supporting obviousness and the objective evidence of non-obviousness provided by SIMC. Upon careful consideration of the evidence as a whole, and weighing it anew, the evidence supporting the conclusion of obviousness outweighs the evidence of non-obviousness. For these reasons, in addition to the reasons explained before with respect to the rejections of claims 1, 2, 5 and 10 over Masataka and Pye and claims 1, 2, 5, 6 and 10 over JP' 405 and Pye, we sustain the rejections of claims 14-16 as obvious over Nakamura and Masataka and obvious over Nakamura and JP '405.

DECISION

We AFFIRM the rejection of claims 7-9 and 12 under 35 U.S.C. § 102(b) as anticipated by Masataka.

Appeal 2010-011799
Reexamination Control 90/007,118
Patent 5,332,981

We AFFIRM the rejection of claims 7-9, 12 and 13 under 35 U.S.C. § 102(b) as anticipated by JP '405.

We AFFIRM the rejection of claims 1, 2, 5 and 10 under 35 U.S.C. § 103(a) as unpatentable over Masataka and Pye.

We AFFIRM the rejection of claims 4 and 11 under 35 U.S.C. § 103(a) as unpatentable over Masataka, Pye and Praria.

We REVERSE the rejection of claim 6 under 35 U.S.C. § 103(a) as unpatentable over Masataka and Brininstool.

We AFFIRM the rejection of claim 13 under 35 U.S.C. § 103(a) as unpatentable over Masataka and Brininstool.

We AFFIRM the rejection of claims 1, 2, 5, 6 and 10 under 35 U.S.C. § 103(a) as unpatentable over JP '405 and Pye.

We AFFIRM the rejection of claims 4 and 11 under 35 U.S.C. § 103(a) as unpatentable over JP '405, Pye and Praria.

We AFFIRM the rejection of claims 14-16 under 35 U.S.C. § 103(a) as unpatentable over Nakamura and Masataka.

We AFFIRM the rejection of claims 14-16 under 35 U.S.C. § 103(a) as unpatentable over Nakamura and JP '405.

ORDER

AFFIRMED

Appeal 2010-011799
Reexamination Control 90/007,118
Patent 5,332,981

Ward & Olivo LLP
382 Springfield Avenue
Summit, NJ 07901

Third Party Requester:

C. Bruce Hamburg
Jordan and Hamburg LLP
122 East 42nd Street
New York, NY 10168