UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte BOGDAN JAKOBIK, JOHN GRUBER, GORDON HARNEY,
ALEX TAGER, ROSS SAUNDERS, HANAN ANIS,
JOHN HARVEY, and AVID LEMUS

Appeal 2008-5463
Application 10/004,097
Technology Center 2600

Decided: January 5, 2009

Before JOSEPH F. RUGGIERO, JOHN A. JEFFERY,
and ELENI MANTIS MERCADER, *Administrative Patent Judges*.

MANTIS MERCADER, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants seek our review under 35 U.S.C. § 134 of the Examiner's final rejection of claims 1, 3-5, and 11.[1] We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

INVENTION

Appellants' claimed invention is directed to an architectural arrangement 30 that enables routing and switching of optical data signals at different optical layers (in Fig. 1, optical layers 14, 16, and 18) and having signal impairment compensation mechanisms 32 at each layer (Fig. 2) for performing dynamic gain flattening, dynamic optical transient suppression, and dynamic dispersion compensation (Spec. ¶[0018]-[0019]).

Claim 1, reproduced below, is representative of the subject matter on appeal:

1. An architectural arrangement for launching an optical system signal into an optical transport network, the optical system signal being constituted in a layered membership relationship that defines at least two optical layers, comprising:

an optical transport line residing in the optical transport network and operable to carry the optical system signal therein;

[1] The Examiner allowed claims 12, 13, and 15 (Final Rejection dated Oct. 05, 2005). We note that the Examiner did not address claims 6-9 which were finally rejected under 35 U.S.C. § 103(a) in the Answer. Furthermore, the Examiner did not list the Milton reference used in finally rejecting claims 6-9 (Final Rej. 5-7) in the "Evidence Relied Upon" in the Answer (Ans. 2). Based on these facts the rejection of claims 6-9 is deemed withdrawn.

a multiplexing component connected to the optical transport line, the multiplexing component operable to receive a plurality of optical data signals therein, combine the plurality of optical data signals to form the optical system signal, and launch the optical system signal into the optical transport line; and

a plurality of signal impairment compensation mechanisms associated with the multiplexing component, the plurality of signal impairment compensation mechanisms operable across each of the optical layers of the optical system signal to perform a signal impairment compensation operation on each of the optical signals therein, where the signal impairment compensation operation includes dynamic gain flattening, optical transient suppression and dispersion compensation.

THE REJECTION

The Examiner relies upon the following as evidence of unpatentability:

Nakamoto	US 6,738,181 B1	May 18, 2004 (filed Aug. 29, 2000)

The following rejection is before us for review:

The Examiner rejected claims 1, 3-5, and 11 under 35 U.S.C. § 103(a) as being unpatentable over Nakamoto in view of Applicants' admitted prior art.

OBVIOUSNESS

ISSUE

Appellants contend *inter alia* that Nakamoto does not perform dispersion compensation on data signal 141-3 which is used only as a reference for

compensating data signals 141-1 and 141-2 (App. Br. 5 and col. 19, ll. 63-67). Appellants thus conclude that Nakamoto teaches away from performing compensation on each of the data signals at this layer (App. Br. 5). Appellants further contend that the amplification performed on data signal 141-3 does not constitute signal impairment compensation as recited in claim 1 which includes dynamic gain flattening, optical transient suppression, and dispersion compensation (App. Br. 5). While Appellants acknowledge that techniques for dynamic gain flattening and optical transient suppression are known, there is no characterization in the prior art that indicates that these techniques are applied to all optical signals in each of the optical layers as recited in claim 1 (App. Br. 6). Furthermore, Appellants assert that amplification is not a form of impairment compensation (App. Br. 6).

The Examiner responds that the Appellants' arguments are directed against Nakamoto individually while the rejection is based on a combination of teachings including Appellants' admitted prior art (Ans. 6). Furthermore, the Examiner asserts that if a signal was to be transmitted at extremely long distances and high quality was required, a skilled artisan would have recognized the need to include more compensation mechanisms of gain flattening and transient suppression to provide better quality signals (Ans. 8).

The issue before us, then, is as follows:

Have the Appellants shown that the Examiner erred by determining that it would have been obvious to one skilled in the art to modify Nakamoto by applying dispersion compensation on the optical signal generated by optical sender 141-3

so that dispersion compensation is performed "on each of the optical signals" as claimed?

FINDINGS OF FACT

The relevant facts include the following:

1. Nakamoto teaches that signals generated by optical senders (OS) 141-1 and 141-2 are inputted to their respective polarization-maintaining dispersion compensating sections (PMDSC) (Fig. 7; col. 19, ll. 38-44 and col. 19, ll. 54-56).
2. Nakamoto further teaches that the signal generated by OS 141-3 is used as a reference and it is only amplified by PMOA 143-1 (Fig. 7; col. 19, l. 63-l. 3).
3. Appellants' admitted prior art teaches that techniques for dynamic gain flattening, optical transient suppression, and dispersion compensation are well known in the art (Spec. ¶[0019]).

PRINCIPLES OF LAW

The Examiner bears the initial burden of presenting a prima facie case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). If that burden is met, then the burden shifts to the Appellants to overcome the prima facie case with argument and/or evidence. *Id.* The Supreme Court, citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006), stated that "'[r]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal

conclusion of obviousness.'" *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007).

"[W]hen the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious." *KSR*, 127 S. Ct. at 1740.

It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743 (Fed. Cir. 1983)

ANALYSIS

Have the Appellants shown that the Examiner erred by determining that it would have been obvious to one skilled in the art to modify Nakamoto by applying dispersion compensation on the optical signal generated by optical sender 141-3 so that dispersion compensation is performed "on each of the optical signals" as claimed?

Nakamoto teaches that signals generated by optical senders (OS) 141-1 and 141-2 are inputted to their respective polarization-maintaining dispersion compensating sections (PMDSC) (Finding of Fact 1). Nakamoto further teaches that the signal generated by OS 141-3 is used as a reference and it is only amplified by PMOA 143-1 (Finding of Fact 2). In other words, the optical signal generated by OS 141-3 is not submitted to dispersion compensation. Thus, it follows that the optical system does not "*perform* a signal impairment compensation operation *on each of the optical signals* therein, where the signal impairment compensation operation includes dynamic gain flattening, optical transient suppression and *dispersion compensation*" as claimed (emphasis added). Even if the Examiner is

correct that amplification is a form of signal impairment, the claim nonetheless requires that the signal impairment compensation performed on each signal includes dispersion compensation, and Nakamoto does not teach dispersion compensation performed on the optical signal generated by OS 141-3.

Furthermore, Appellants' admitted prior art does not remedy the shortcomings of Nakamoto. At best, Appellants' admitted prior art teaches that techniques for dynamic gain flattening, optical transient suppression, and dispersion compensation are well known in the art (Finding of Fact 3). There is no characterization in the admitted prior art that indicates that these techniques are applied to all of the optical signals in each of the optical layers as recited in claim 1, and in fact Nakamoto teaches away from performing dispersion compensation on the optical signal generated by OS 141-3. As stated *supra*, when the prior art teaches away from combining certain known elements (i.e., Nakamoto teaches away from applying dispersion compensation on the optical signal generated by OS 141-3), discovery of a successful means of combining them (i.e., applying dispersion compensation on all signals) is more likely to be nonobvious. *KSR*, 127 S.Ct. at 1740.

For the above reasons, Appellants have shown error in the Examiner's rejection of independent claim 1 under 35 U.S.C. § 103(a) as well as independent claim 5 which recites commensurate limitations. For similar reasons, we are likewise persuaded of error in the Examiner's rejection of dependent claims 3, 4, and 11.

CONCLUSION OF LAW

Appellants have shown that the Examiner erred by determining that it would have been obvious to one skilled in the art to modify Nakamoto by applying dispersion compensation on the optical signal generated by optical sender 141-3 so that dispersion compensation is performed "on each of the optical signals" as claimed.

ORDER

The decision of the Examiner to reject claims 1, 3-5, and 11 under 35 U.S.C. § 103(a) is reversed.

REVERSED

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