

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN DRAIM

Appeal No. 2002-1146
Application No. 09/160,634¹

ON BRIEF

Before KRASS, FLEMING and SAADAT, Administrative Patent Judges.
SAADAT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the Examiner's final rejection of claims 1,2 and 4-8, which are all of the claims pending in this application. Claim 3 has been canceled.

We reverse.

BACKGROUND

Appellant's invention is directed to a system and a method for compensating communications between an antenna and two satellites when their systems interfere due to the overlap of the satellites' orbits. The center line of the antenna aimed at the

¹ Application for patent filed September 23, 1998.

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desired satellite is steered to an offset position from the center of the beam but places the undesired satellite as close to a null as possible (specification, page 2).

Representative independent claim 1 is reproduced below:

1. A satellite communication system, comprising:

a ground station, having a main antenna which is movable, said main antenna of a type which produces a central beam and side lobe beam with null portions between at least two of said beams, said ground station also including a controller which can determine interference between a satellite being monitored and another satellite, wherein said controller also controls a pointing position of the main antenna, and said controller is operative to normally point a center of the antenna directly at said satellite being monitored, and responsive to determining a likelihood of interference, moves a center line of the antenna away from the satellite being monitored, and toward said null portion.

The Examiner relies on the following references in rejecting the claims:

Kurby et al. (Kurby)	5,559,806	Sep. 24, 1996
Gagnon et al. (Gagnon)	5,983,071	Nov. 9, 1999 (filed Jul. 22, 1997)
Lusignan	6,075,969	Jun. 13, 2000 (filed Jan. 9, 1997)

Claims 1, 2 and 4-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kurby in view of Lusignan and Gagnon.

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We make reference to the answer (Paper No. 13, mailed April 10, 2001)² for the Examiner's reasoning, and to the appeal brief (Paper No. 12, filed December 29, 2000) and the reply brief (Paper No. 14, filed June 28, 2001) for Appellant's arguments thereagainst.

OPINION

The Examiner relies on Kurby for teaching a satellite communications system having a controller that can direct the position of a movable antenna based on signal quality measurements (answer, pages 3 & 4). The Examiner, however, relies on Gagnon for disclosing the control of the antenna based on the determined interference between a satellite being monitored and another satellite and on Lusignan for teaching the existence of null positions within an antenna pattern (answer, page 4). The Examiner further takes the position that the combination would have taught the claimed subject matter to one of ordinary skill in the art since moving "a centerline of said antenna away from the satellite being monitored, and toward said null" would mitigate the interference between the base station and the interfering satellite (answer, page 5).

²The answer was re-mailed on May 25, 2001.

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Appellant argues that the Examiner, in relying on Gagnon for teaching the movement of the centerline of the antenna in response to likelihood of interference (col. 2, lines 25-37; col. 6, lines 1-5), improperly characterizes the movement of the antenna for maximizing its signal quality with the claimed moving the antenna away from the centerline or the perfect orientation (brief, page 6). Additionally, Appellant points to the teachings of the applied references as attempting to maximize the tracking instead of the claimed mis-tracking the satellite (brief, page 7). Appellant further asserts that Lusignan's forming nulls in an antenna transmitting pattern is done by aperture synthesis (col. 6, line 45) and does not meet the claimed feature of moving the antenna to apply the beam null to the area of the interfering satellite (reply brief, pages 1 & 2).

In response to Appellant's arguments, the Examiner provides a lengthy discussion of the transmitting pattern of antennas (answer, pages 8-11) and concludes that the interfering signals can be taken out of the pattern by moving the antenna and tuning it to get a better signal (answer, pages 9). The Examiner further asserts that the claimed moving the antenna away from the center line of the satellite does not require moving the antenna away from perfect signal quality (answer, pages 9 & 10).

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Furthermore, the Examiner concludes that the increased signal quality of the prior art is achieved by moving the antenna and placing the interfering signal in "NULL" (answer, page 11).

In rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of presenting a prima facie case of obviousness. See In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). To reach a conclusion of obviousness under § 103, the examiner must produce a factual basis supported by teaching in a prior art reference or shown to be common knowledge of unquestionable demonstration. Such evidence is required in order to establish a prima facie case. In re Piasecki, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed. Cir. 1984). The Examiner must not only identify the elements in the prior art, but also show "some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead the individual to combine the relevant teachings of the references." In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988).

A review of the applied prior art confirms that Kurby merely teaches a satellite communications system having a steerable antenna array (col. 2, lines 40-42) that is controlled by steering control and system control 680 (Fig. 5, col. 5, lines

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35-47). However, as contended by the Examiner (answer, page 4), the claimed movement of the center line of the antenna away from the satellite being monitored toward a null portion is absent in Kurby. Gagnon also discloses a receiver having an antenna used to receive audiovisual programs from a satellite (col. 2, lines 11-24). However, Gagnon employs an adjustment mechanism that automatically orients the antenna position for receiving signals based on the relative signal qualities such as signal strength and error rate (col. 6, lines 2-42). We agree with Appellant that the mechanism used in Gagnon moves the antenna to improve the signal quality but falls short of the claimed moving the antenna away from the perfect orientation along its center line. The portions of the disclosure of Gagnon relied on by the Examiner merely describe an antenna controller 180 that is used to automatically adjust the orientation of the antenna (col. 6, lines 1-5) and provide no evidence in support of moving the antenna center line away from the satellite.

Lusignan, on the other hand, describes a satellite communication system for receiving signals from a satellite to multiple antennas (col. 1, lines 9-16) using a combination of aperture synthesis, spectral shaping and video compression (col. 4, lines 23-29). As argued by Appellant (reply brief, pages 1 &

2), the only discussion of nulls in the antenna pattern in Lusignan relates to the actual design of the antenna shape such that nulls are placed at the orbit locations corresponding to the interfering satellites (col. 6, lines 45-65). However, Lusignan provides no discussion related to moving the center line of the antenna to place the interfering satellite in the null pattern. Additionally, the Examiner has failed to point to any teachings in the applied references, nor do we find any, that supports the conclusion that "when an antenna is moved or tuned to get a better quality signal the interfering signals are taken out of the pattern by movement, ... because the interfering signals are no longer within the reception pattern" (answer, page 9). Thus, although we agree with the Examiner that null portions in antenna reception patterns may be recognized in the art, we do not find any specific teaching in the references that would have motivated one of ordinary skill in the art to move the center line of the antenna away from the interfering satellite and position it in the null portion, as recited in claims 1 and 8.

"Deficiencies of the cited references cannot be remedied by the Board's general conclusions about what is 'basic knowledge' or 'common sense.'" In re Zurko, 258 F.3d 1379, 1385, 59 USPQ2d 1693, 1697 (Fed. Cir. 2001). Furthermore, "the Board's findings

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must extend to all material facts and must be documented on the record, lest the 'haze of so-called expertise' acquire insulation from accountability." In re Lee, 277 F.3d 1338, 1345, 61 USPQ2d 1430, 1435 (Fed. Cir. 2002). Here, we find the Examiner's arguments to be supported merely by the Examiner's own expertise instead of the evidence of record and the teachings of prior art which are required in order to establish a prima facie case of obviousness. As pointed out by Appellant (reply brief, page 2), there is nothing in the combination of Kurby with Gagnon and Lusignan that may teach or suggest the specific movement of the center line of the antenna away from the satellite. In our view, even the Examiner's discussions of the null portions in an antenna reception pattern and the conclusion that the antenna movement improves signal quality (answer, page 4) are inconclusive for establishing obviousness because the references suggest neither such movement of the antenna nor its placement toward the null portions.

In view of our analysis above, we find that the Examiner has failed to set forth a prima facie case of obviousness because the necessary teachings and suggestions related to the claimed movement of the center line of the antenna away from the interfering satellite, as recited in independent claims 1 and 8,

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are not shown. Accordingly, we do not sustain the 35 U.S.C. §
103 rejection of the claims.

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CONCLUSION

In view of the foregoing, the decision of the Examiner
rejecting claims 1, 2 and 4-8 under 35 U.S.C. § 103 is reversed.

REVERSED

ERROL A. KRASS)	
Administrative Patent Judge)	
)	
)	
)	BOARD OF PATENT
)	
MICHAEL R. FLEMING)	APPEALS
Administrative Patent Judge)	
)	AND
)	
)	INTERFERENCES
)	
MAHSHID D. SAADAT)	
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