

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 35

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MANUEL J. CARLONI, MICHAEL J. GANS,
REINALDO VALENZUELA, and JACK H. WINTERS

Appeal No. 2001-1601
Application No. 08/404,406

ON BRIEF

Before THOMAS, KRASS, and GROSS, **Administrative Patent Judges**.
GROSS, **Administrative Patent Judge**.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 through 12, 16, 17, and 19 through 29. Claims 13 through 15 have been canceled, and on page 2 of the Brief, appellants canceled claim 18 from further prosecution.

Appellants' invention relates to a wireless communication system with multiple antenna elements at both the transmitter and the receiver, wherein the antenna elements at both locations point in plural azimuthal and plural elevational directions.

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Claim 1 is illustrative of the claimed invention, and it reads as follows:

1. A wireless communications device for indoor communications comprising:

a plurality of first antenna elements for receiving a plurality of outbound signals on multiple receive antenna beams pointing in both plural respective azimuthal and plural respective elevational directions wherein each said outbound signal is transmitted from a second plurality of antenna elements on a different one of a plurality of outbound antenna beams, said second antenna elements pointing in different azimuthal and elevational directions to facilitate said indoor communications in a multipath indoor environment; and

a first processor operatively connected to the first antenna elements and responsive to said received outbound signals for determining a suitable indoor communications path between at least one of the first antenna elements and at least one of the second antenna elements with respect to predetermined communications conditions.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Graziano	4,128,740	Dec. 05, 1978
Vasile	5,089,823	Feb. 18, 1992
Freeburg	5,095,535	Mar. 10, 1992
Borras et al. (Borras)	5,303,240	Apr. 12, 1994
Harbin et al. (Harbin)	5,701,583	Dec. 23, 1997

Claims 1 through 5, 7, 8, 12, 16, 17, 19, 21, 22, and 29 stand rejected under 35 U.S.C. § 103 as being unpatentable over Freeburg in view of Harbin.

Claims 6 and 20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Freeburg in view of Harbin and Borras.

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Claims 9, 23, 25, and 28 stand rejected under 35 U.S.C. § 103 as being unpatentable over Freeburg in view of Vasile.

Claim 27 stands rejected under 35 U.S.C. § 103 as being unpatentable over Freeburg in view of Vasile and Graziano.

Claims 10, 11, 24, and 26 stand rejected under 35 U.S.C. § 103 as being unpatentable over Freeburg in view of Vasile and Harbin.

Reference is made to the Examiner's Answer (Paper No. 33, mailed July 14, 2000) for the examiner's complete reasoning in support of the rejections, and to appellants' Brief (Paper No. 32, filed April 17, 2000) for appellants' arguments thereagainst.

OPINION

We have carefully considered the claims, the applied prior art references, and the respective positions articulated by appellants and the examiner. As a consequence of our review, we will reverse the obviousness rejection of claims 1 through 12, 16, 17, and 19 through 29 and affirm the obviousness rejection of claims 23, 25, 27 and 28.

Each of independent claims 1, 9, 12, and 16 recites, in pertinent part, multiple coverage in both azimuthal and elevational directions. The examiner (Answer, page 4) indicates

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that Freeburg discloses antenna elements pointing in different azimuthal directions, and (Answer, page 5) asserts that "[t]he antenna array elements A-F of Freeburg inherently includes an omnidirectional elevation direction coordinated with the plurality of azimuthal directions, which is inherent in the antenna technology." The examiner, however, fails to provide any evidence of inherency, despite appellants' argument (Brief, page 8) that Freeburg's antenna beams do not point in both plural azimuthal and plural elevational directions. In *In re Lee*, 277 F.2d 1338, 1342-43, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002), the court held that a factual inquiry whether to modify a reference must be based on objective evidence of record, not merely conclusionary statements of the examiner. The same applies to inherency. Conclusionary statements of the examiner as to inherency are insufficient; factual evidence of inherency is required, and such evidence is lacking in the present case.

The examiner asserts (Answer, page 5) that "Freeburg fails to teach that the array of antenna elements A-F can focus the beams by narrowing the beam widths in the elevation plane (pointing in a plurality of elevation directions)." The examiner relies upon Harbin's teaching that an array of antennas can achieve more gain by focusing the beam widths in the elevation

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plane. However, we do not see how a teaching to narrow the beam widths in the elevation plane suggests pointing in a plurality of elevation directions (as in claim 1) or providing multiple coverage in the azimuthal and elevational directions (as in claims 9, 12, and 16). Likewise, we find no suggestion in Harbin that multiple elevational directions with the plurality of azimuthal directions is inherent in Freeburg. Accordingly, we cannot sustain the obviousness rejection of claims 1 through 5, 7, 8, 12, 16, 17, 19, 21, 22, and 29 over Freeburg and Harbin.

Regarding claims 6 and 20, the examiner adds Borrás to the combination of Freeburg and Harbin. We find no teaching or suggestion in Borrás to cure the deficiency of Freeburg and Harbin. Therefore, we cannot sustain the obviousness rejection of claims 6 and 20.

The examiner rejected claim 9 over Freeburg in view of Vasile. Freeburg, as explained *supra*, fails to teach anything about the elevational direction of the antenna beams. The examiner again asserts (Answer, page 10) that Freeburg "inherently includes an omnidirectional elevation directions with the plurality of azimuthal directions, which is inherent in the antenna technology," without supplying any evidence of inherency. The examiner (Answer, page 12) relies upon Vasile for

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substituting an electrically steerable antenna array for the multiple directional antennas of Freeburg. We find no teaching or suggestion in Vasile, and the examiner points to none, that supports the examiner's assertion of inherency. Thus, we cannot sustain the obviousness rejection of claim 9.

Claims 10 and 11, via their dependence from claim 9, as well as claims 24 and 26, recite multiple azimuthal and multiple elevational beams. The examiner combines Freeburg with Vasile and Harbin to reject claims 10, 11, 24, and 26. As discussed *supra*, none of the three references teaches or suggests this claim limitation. Consequently, the combination fails to teach or suggest the limitation, and we cannot sustain the rejection of claims 10, 11, 24, and 26.

Claim 23 and claims 25, 27 and 28, which depend therefrom, do not recite multiple azimuthal and multiple elevational beams. Thus, we first view claims 23, 25, and 28, which have been rejected over Freeburg in view of Vasile. The examiner states (Answer, page 11) that "Freeburg differs from the present claim in that the antenna array is provided by multiple directional antennas, instead of electronically steerable array antenna." However, the examiner (Answer, page 11) notes that Freeburg indicates (column 3, lines 39-42) that "a single electrically or

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mechanical steerable antenna is the equivalent of the multiple directional antennas and can be substituted therefor." The examiner (Answer, page 12) turns to Vasile for the particular elements of such an electronically steerable antenna, such as the claimed mixers, weight generator, and adder.

Appellants do not argue the combination of Freeburg and Vasile. Appellants' sole argument regarding claims 23, 25, and 28 is (Brief, page 15) that Vasile fails to disclose the claimed second processor for receiving the received signal from the adder and providing a profile for each of the second antenna elements for determining a suitable communication path between the base station and the respective remote. However, the purpose of Freeburg is to select the best communication path established between two terminals (see the Abstract). Such a selection is accomplished by a processor which compares and ranks the various signal strengths. The substitution of a steerable antenna with mixers, a weight generator, and an adder, for the multiple directional antennas of Freeburg does not change Freeburg's goal of selecting the best communication path. Therefore, the combination would still include a processor for determining the best path. However, as the skilled artisan would recognize, the processor would have to be modified to compare the signals from

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the adder. The level of the skilled artisan should not be underestimated. **See *In re Sovish***, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir. 1985). Accordingly, we will sustain the obviousness rejection of claims 23, 25, and 28 over Freeburg and Vasile.

For claim 27, the examiner added Graziano to the combination of Freeburg and Vasile. As appellants did not provide any arguments as to Graziano, we will sustain the rejection of claim 27 for the same reasons as claims 23, 25, and 28, ***supra***.

CONCLUSION

The decision of the examiner rejecting claims 1 through 12, 16, 17, and 19 through 29 under 35 U.S.C. § 103 is reversed as to claims 1 through 12, 16, 17, 19 through 22, 24, 26, and 29 and affirmed as to claims 23, 25, 27 and 28. Thus, the examiner's decision is affirmed-in-part.

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

AFFIRMED-IN-PART

JAMES D. THOMAS)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
ERROL A. KRASS)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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ANITA PELLMAN GROSS)	
Administrative Patent Judge)	

APG/vsh

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EAMON J. WALL, ESQ.
MOSER, PATTERSON & SHERIDAN, LLP
595 SHREWSBURY AVENUE
SUITE 100
SHREWSBURY, NJ 07702