The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DR. GOVIND R. KADAMBI, KENNETH D. SIMMONS,
and THOMAS F. MASEK

Appeal No. 2002-0269
Application No. 09/495,604

ON BRIEF

Before HAIRSTON, DIXON, and BLANKENSHIP, Administrative Patent Judges.

BLANKENSHIP, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-3, which are all the claims in the application.

We affirm.

BACKGROUND

The invention is directed to a “Planar Inverted -F Antenna” (PIFA) suited for use within a mobile cellular handset. Claim 1 is reproduced below.

1. A Planar Inverted -F Antenna (PIFA) is characterized by:

a one-piece radiating element having upper and lower ends;

a ground plane positioned below said radiating element;

a first through hole formed in said ground plane;

a power feeding connector pin extending upwardly through said first through hole and being electrically connected to said radiating element;

said power feeding connector pin being electrically insulated from said ground plane;

a second through hole formed in said ground plane;

a conductive shorting pin extending upwardly through said second through hole;

said shorting pin being electrically connected to said ground plane and said radiating element.

The examiner relies on the following references:

Murch et al. (Murch)	5,764,190	Jun. 9, 1998
Korisch	5,926,139	Jul. 20, 1999 (filed Jul. 2, 1997)

Claim 1 stands rejected under 35 U.S.C. § 102 as being anticipated by Korisch.

Claims 2 and 3 stand rejected under 35 U.S.C. § 103 as being unpatentable over Korisch and Murch.

We refer to the Final Rejection (Paper No. 5) and the Examiner's Answer (Paper No. 12) for a statement of the examiner's position and to the Brief[1] (Paper No. 11) and the Reply Brief (Paper No. 13) for appellants' position with respect to the claims which stand rejected.

OPINION

The examiner finds instant claim 1 to be anticipated by Korisch, for the reasons set forth at page 3 of the Answer. According to appellants, Korisch does not disclose a "one-piece radiating element." Appellants deem Korisch to teach a radiating element having two separate and distinct parts; namely, radiating portions 30 and 32. Appellants teach, on the other hand, a radiating element that is "devoid of physical partitioning." (Brief at 7.) The examiner responds by pointing to column 3, lines 7 through 9 of Korisch, finding that Korisch teaches that radiating element 28 (e.g., Fig. 3) is a "unitary" layer of conductive material. (Answer at 5.)

We agree with the examiner that the unitary second layer 28 of Korisch is a "one-piece radiating element" within the ambit of claim 1. As appellants observe, the radiating element comprises a first radiating portion 30 and a second radiating portion 32, joined by connecting portion 34. Korisch col. 2, l. 66 - col. 3, l. 19; Fig. 3. However, claim 1 does not distinguish over the unitary structure described by Korisch. We

[1] Appellants filed an earlier brief that was refused entry by the examiner, and which we accordingly have not considered in reaching our determinations.

therefore sustain the rejection of claim 1 under 35 U.S.C. § 102 as being anticipated by Korisch.

We turn to the rejection of claims 2 and 3 under 35 U.S.C. § 103 as being unpatentable over Korisch and Murch. Appellants allege there is no motivation to combine the references, but offer no foundation for the view. (Brief at 8-9). However, we consider the references to support the examiner's finding of motivation. The artisan, particularly in view of Murch's teachings at columns 1 and 2 of the reference, would have been motivated to apply the refinements taught by Murch to the antenna described by Korisch for the purpose of effecting a smaller antenna.

Appellants also assert that Murch teaches that one side vertical portion of the antenna must be directly connected to the ground plane. Appellants point to the instant specification for a teaching that the lower edge of each side vertical plane is to be positioned a specific distance from the ground plane. (Brief at 9.)

Murch describes conductor 7 (Fig. 2) as being connected to second conductor plate (ground plane) 6. Col. 3, ll. 8-48. However, we agree with the examiner that conductor ("first side portion") 7 extends downwardly towards the ground plane, and further agree that claim 2 does not preclude contact between the first side portion and the ground plane.

Appellants further assert (Brief at 9-10) that neither reference teaches a reactive loading slot specifically located between a second side vertical portion and a shorting pin. Murch, however, teaches (Fig. 14(a)) a slot 20 in the first conductor plate (i.e., in

the radiating element, in the terms of the instant claims). The slot is provided to vary a resonant frequency. Murch col. 5, ll. 32-38.

Instant claim 2 sets forth the reactive loading slot as being located somewhere between the "second side vertical portion" and the "shorting pin." We find that Murch teaches, when comparing Figure 14(a) with Figures 2 and 3, that the slot in the first conducting plate (radiating element) 5 be placed toward the right side of the conducting plate as shown in Figure 2, near second conductor ("second side vertical portion") 8. The combined teachings of Korisch and Murch thus would have suggested that the slot be near the end of the radiating element towards the second side vertical portion, and therefore between the second side vertical portion and the balance of the antenna structure, such as the "shorting pin" taught by Korisch.

We thus find that the teachings of the applied references are sufficient to establish prima facie unpatentability of the subject matter as a whole of instant claim 2. The examiner having met this initial burden, the burden of coming forward with evidence or argument shifted to appellants. After evidence or argument is submitted by an applicant in response to a rejection, patentability is determined on the totality of the record, by a preponderance of evidence with due consideration to persuasiveness of argument. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

Appellants have provided no rebuttal evidence in support of the arguments submitted, and we consider the arguments to be unpersuasive in showing error in the rejection. We thus sustain the Section 103 rejection of claim 2.

With respect to claim 3, appellants rely on the arguments in support of claim 1 that we find unconvincing. Claim 3 thus falls with claim 2, and we sustain the Section 103 rejection of both the claims.[2]

CONCLUSION

The rejection of claim 1 under 35 U.S.C. § 102 is affirmed. The rejection of claims 2 and 3 under 35 U.S.C. § 103 is affirmed.

[2] We note that claim 3 improperly depends from claim 1, rather than claim 2, which sets forth antecedent for "said lower horizontal portion."

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

AFFIRMED

KENNETH W. HAIRSTON Administrative Patent Judge	)	
JOSEPH L. DIXON Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
HOWARD B. BLANKENSHIP Administrative Patent Judge	)	

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