

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today
(1) was not written for publication in a law journal and
(2) is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HERBERT SCHLEGEL, JR.,
TIMOTHY J. BLANEY and
CHARLES N. DIFRONZO

Appeal No. 96-2385
Application 08/110,807¹

ON BRIEF

Before THOMAS, HECKER and FRAHM, Administrative Patent Judges.
THOMAS, Administrative Patent Judge.

DECISION ON APPEAL

¹ Application for patent filed August 23, 1993.

Appeal No. 96-2385
Application 08/110,807

Appellants have appealed to the Board from the examiner's final rejection of claims 1 and 3 through 21, which constitute all the claims in the application.

Representative claim 1 is reproduced below:

1. An antenna arrangement comprising at least two antennas spaced from one another by a distance related to a frequency band over which communications are to take place, each of said antennas including:

a metallic base plate which is disposed on a first printed circuit board and forms a ground plane;

a folded radiating element formed on a second printed circuit board and having a first linear portion which extends in a direction generally perpendicular to said base plate and a second linear portion connected to said first portion and extending in a direction generally parallel to said base plate;

a shunt inductance connected between said radiating element and said base plate; and

a cable having a first conductor connected to said first portion of said radiating element and a second conductor connected to said base plate.

The following references are relied on by the examiner:

Josephson 1, 1961	2,994,876	Aug.
Zakman 1989	4,876,552	Oct. 24,
Mishima et al. (Mishima)		

Appeal No. 96-2385
Application 08/110,807

(Japanese Kokai)

56-12102²

Feb. 6, 1981

Claims 1 and 3 through 21 stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the examiner relies upon the combined teachings of Mishima in view of Josephson and Zakman.

Rather than repeat the positions of the appellants and the examiner, reference is made to the briefs and the answer for the respective details thereof.

OPINION

The rejection of the claims on appeal is reversed.

The stated examiner's position at page 2 of the final rejection, which the examiner utilizes as the statement of the rejection of the claims on appeal, recognizes that no printed circuit boards are taught in Mishima with which the antenna conductors and ground planes are respectively formed. The examiner utilizes Josephson and Zakman to show a perpendicular

² A translation copy of this reference obtained by the Board is attached to this opinion.

Appeal No. 96-2385
Application 08/110,807

antenna element and a ground plane formed of printed circuit boards and asserts that "[s]uch construction is taken for granted by the skilled artisan when forming printed circuit UHF antennas." The examiner attempts to utilize Josephson and Zakman as evidence to form the Mishima antenna and ground plane of respective printed circuit boards. The second page of the Advisory Action also takes the view that the artisan would have recognized that all antenna conductors may be formed on dielectric or printed circuit boards from the teachings of Josephson and Zakman and again concludes that "[s]uch formation is taken for granted as set out in the final Office action." Finally, a similar view is taken at the bottom of page 4 of the responsive arguments portion of the answer.

The examiner's views are not supported by the evidence of record from the combined teachings of the references. Mishima's earthy board 3 in the various figures comprises the ground plane of the claims according to the examiner's view. However, the environment of use of Mishima's antenna is for airplanes and cars, thus suggesting that this ground plane may be the metal skin of the vehicle or mobile unit generally

speaking. In Josephson, a ground plane is suggested in Figures 1 through 3 and generally indicated by the X distance in Figure 3 as noted at column 3, lines 30 and 31. As to the Figures 13 through 15 embodiments, these are directed to aircraft antennas, thus also suggesting that the apparent ground plane or stated counterpoise in the reference may be or would likely have been the metal skin of the aircraft. There are no printed circuit board teachings in Mishima, yet we recognize that the artisan would have probably perceived that the construction of the antenna arrangement of Figure 14 of Josephson of the antenna conductors 2 and 3 being mounted as metal foils to dielectric plates 5 and 6 would have suggested a printed circuit board construction approach.

The Figure 5 antenna arrangement in Zakman is analogized structurally in Figure 7. Between the discussions of Figures 5 and 7 at columns 5 and 6, the antenna structures 503/505 of Figure 5 have been embodied in the form of a printed metallized copper foil on printed circuit boards in the structure of Figure 7 of the slotted printed circuit board 731 therein with the analogous portions of 733 and 735 compared to structures 503 and 505 in Figure 5. Significant in Figure 7,

Appeal No. 96-2385
Application 08/110,807

however, is that the sheet metal 701 is described as a "ground plate bracket" comprising additional portions 703 and 705. These are not taught to be formed of a printed circuit board in this reference. There is no real suggestibility of that construction, contrary to the examiner's point of view, regarding the portion of a ground plane comprising the copper conductive strip 1001 glued to the batteries 301 in Figure 3 directly connecting to the metallized plastic 1003, connecting in turn to this sheet metal plate 703 of the circuit described in Figure 7.

Among all these collective teachings and showings of the references relied upon, there is no clear suggestibility or teaching for that matter to the artisan to form a ground plane or plate of a printed circuit board as recited in each independent claim 1, 10 and 14 on appeal. The artisan therefore would not have taken the collective teachings and showings of the three references relied upon and prospectively arrived at the presently claimed subject matter in these independent claims. Since we cannot sustain the rejection of each independent claim 1, 10 and 14 on appeal, the rejection of their respective dependent claims falls as well.

Appeal No. 96-2385
Application 08/110,807

In view of the foregoing, the decision of the examiner is reversed.

REVERSED

	JAMES D. THOMAS)	
	Administrative Patent Judge)	
)	
)	
)	
	STUART N. HECKER)	BOARD OF
PATENT	Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
)	
)	
	ERIC S. FRAHM)	
	Administrative Patent Judge)	

JDT/cam

James W. Peterson
Burns, Doane, Swecker & Mathis
George Mason Building
Washington & Prince Streets
P. O. Box 1404
Alexandria, VA 22314-1404