

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 42

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GERARD RAGUENET

Appeal No. 96-0625
Application 08/044,113¹

HEARD: March 9, 1999

Before KRASS, BARRETT and FRAHM, Administrative Patent Judges.

FRAHM, Administrative Patent Judge.

DECISION ON APPEAL

Appellant has appealed to the Board from the examiner's final rejection of claims 9, 10, and 15 to 17. Claims 1 to 8 have been canceled.² In the final rejection (page 4, paragraph 7), the examiner

¹ Application for patent filed April 8, 1993. According to appellant, the application is a continuation of Application 07/779,240, filed October 18, 1991, now abandoned.

² Claims 1 to 8 were canceled in parent application number 07/779,240 as per appellant's instructions at page 3 of an amendment dated September 16, 1992.

objected to claims 11 to 14 as being allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claim. Thus, only claims 9, 10, and 15 to 17 remain before us on appeal.

BACKGROUND

The subject matter on appeal is directed to the field of signal transmission using a radiating element (specification, page 1), and in particular, to a feed device for a radiating element operating in dual polarization (specification, page 1 and claim 9 on appeal). As indicated in the specification (page 5), a first and second feed line contained in respective first and second cavities are perpendicular to each other and are orthogonal to a principal axis. A coupling device between the cavities serves to electromagnetically couple the cavities (page 6). The coupling device consists of a conductive member which is smaller than the first and second cavities, is spaced apart from the first and second cavities, and also partially closes off adjacent ends of the cavities. In general, appellant's invention recited in sole independent claim 9 on appeal seeks to provide a dual polarization feed device with two cavities separated by the coupling device as just described. As further discussed, infra, we find that the applied references to Watanabe and Fassett each fail to individually teach or suggest at least the feature of a coupling device as defined in the claims on appeal.

Representative claim 9 is reproduced below:

9. A feed device for a radiating element operating in dual polarization, said feed device comprising:

means defining a first cavity, means defining a second cavity, said first cavity comprising an interior electrically conductive cavity wall at least partially enclosing said first cavity, said second cavity comprising an interior electrically conductive cavity wall at least partially enclosing said second cavity, said feed device further comprising a coupling device for electromagnetically coupling said cavities, a first feed line and a second feed line for transporting respective electromagnetic waves to said radiating elements;

wherein said radiating element, said first cavity and said second cavity are respectively aligned along an imaginary principal axis defining a main direction of radiation of said radiating element;

wherein said first feed line penetrates into said first cavity and is oriented perpendicular to said principal axis;

and wherein said second feed line penetrates into said second cavity and is oriented perpendicular to said principal axis and orthogonal to said first feed line;

and wherein said coupling device is a coupling slot defined by a conductive member placed between said first and said second cavities, sized smaller than said cavities, spaced from said conductive cavity walls, and partially closing off adjacent ends of said cavities.

The following references are relied on by the examiner:

Fassett	3,974,462	Aug. 10, 1976
Watanabe et al. (Watanabe)	4,596,047	Jun. 17, 1986

Claims 9, 10, and 15 to 17 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Watanabe.

Claims 9, 10, and 15 to 17 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Fassett.

Rather than repeat the positions of appellant and the examiner, reference is made to the Briefs

and the Answer for the respective details thereof.³

OPINION

In reaching our conclusion on the issues raised in this appeal, we have carefully considered appellant's specification and claims, the applied patents, the respective viewpoints of appellant and the examiner, and all other evidence of record. As a consequence of our review, we find that Watanabe (see at least figures 11 and 16) and Fassett (see at least figure 5) fail to anticipate at least the "coupling device" limitation of independent claim 9 on appeal. Accordingly, we will reverse the examiner's decision rejecting independent claim 9 on appeal. We will also reverse as to dependent claims 10 and 15 to 17 since they differ in scope and depend from parent independent claim 9. See In re Fine, 837 F.2d 1071, 1076, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988) and Ex parte Kochan, 131 USPQ 204, 206 (Bd. Pat. App. & Int. 1961).

At the outset, we note that for a prior art reference to anticipate a claim it must disclose, either explicitly or inherently, each and every limitation of the claimed invention. In re Schreiber, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997). We think a correct analysis of the anticipation issues involved in this appeal requires a proper interpretation of sole independent claim 9 on

³ We will refer in our opinion to the amended Brief received April 10, 1995, and not to the original and defective Brief originally filed. We note that the Reply Brief has been entered and considered as per the November 15, 1995, communication from the examiner. We also note that the after final amendment filed on October 3, 1994, has been entered.

appeal. Claim 9 recites, and we find that the applied references fail to teach, the following critical limitation with respect to the coupling device:

. . . wherein said coupling device is a coupling slot defined by a conductive member placed between said first and said second cavities, sized smaller than said cavities, spaced from said conductive cavity walls, and partially closing off adjacent ends of said cavities.

We turn first to the rejection of claims 9, 10, and 15 to 17 under 35 U.S.C. § 102(b) over Watanabe. The examiner relies upon iris filter 37 (figures 14 and 16) to teach the "coupling device" or "coupling slot" of claim 9 (Answer, page 3), and in the alternative, the examiner relies upon members 21 and 28 (figures 7 and 8) to teach this feature (Answer, page 3). The examiner argues (Answer, page 6) that filter 37 and plate 21 meet the "coupling device" limitation "because they allow one polarization (H) to pass to the other waveguide while preventing the other polarization (V) to pass" (Answer, page 6).

We find that iris filter 37 fails to meet the clear requirements set forth in claim 9 of being "smaller than" the first and second cavities and being spaced from the conductive cavity walls. As seen from figure 14 of Watanabe, the iris filter 37 consists of a member having a rectangular slot therein. While the slot of the filter is "smaller than" the first and second cavities, the coupling device or filter 37 itself is not smaller than the cavities (it is the same size). Likewise, while the slot in filter 37 is spaced

apart from the cavity walls, the coupling device or filter 37 itself is not spaced apart from the cavity walls.

We also find that plates 21 and 28 fail to meet the clear requirements set forth in claim 9 of being "between said first and said second cavities" and of "partially closing off adjacent ends of said cavities." Plates 21 and 28 serve as reflection elements (Watanabe; column 5, lines 12 to 52) which are not between the first and second cavities (see figure 16), but which are in the middle of each of the first and second cavities. Thus, we are in agreement with appellant that Watanabe fails to anticipate claim 9 as to the "coupling device" feature (Brief, page 7; Reply Brief, page 3).

We turn next to the rejection of claims 9, 10, and 15 to 17 under 35 U.S.C. § 102(b) over Fasset. We are in agreement with appellant's view of Fasset, that "[n]o coupling device as required by independent claim 9 exists in the Fasset reference" (Brief, page 9), and that "[t]here is nothing in Fasset which suggests, either expressly or impliedly, that the 'unnumbered pins' referenced by the Examiner define the circumference of the annular openings 134 and 138" (Reply Brief, page 6).

The examiner relies upon circular opening 136 in metallic plate 125 (figure 5) to teach the "coupling device" or "coupling slot" of claim 9 (Answer, page 8). We cannot agree with this interpretation, since for the circular opening 136 to read on claim 9's coupling device, the unnumbered pins must be read to be the "conductive walls" of claim 9. This is because claim 9 recites the coupling device as being "sized smaller than said cavities," being "spaced from said conductive cavity walls," and

"partially closing off adjacent ends of said cavities" - none of which is true unless the unnumbered pins are interpreted as being the "conductive walls" and the circular opening 136 is interpreted as being the coupling device. Therefore, we turn next to the conductive walls.

The examiner asserts (Answer, page 8) that the first and second cavities are made up of annular openings 134 and 138 in dielectric sheets 124 and 130, respectively. The examiner interprets that the cavities recited in claim 9 are shown in Fassett's figure 5 since the unnumbered pins in sheets 124 and 130 make up the circumference, or "walls," of the cavities. For this reason, the examiner alleges that the coupling device (plate 125 having circular opening 136) is "sized smaller than said cavities" and is "space from said conductive cavity walls." We disagree with this interpretation of Fassett by the examiner because we can find no support for the proposition that the unnumbered circle of pins in Fassett's figure 5 constitute a "conductive wall" as required by claim 9 on appeal. Our close review of Fassett reveals no place in the reference which discusses the unnumbered pins of figure 5. Most notably, Fassett discusses figure 5 from column 5, line 22 through column 6, line 18. Nowhere in his discussion of figure 5 does Fassett teach or suggest that the unnumbered pins are conductive or represent "conductive walls."

We also agree with appellant's argument (Reply Brief, page 7) that center conductors 130 and 132 are not "orthogonal" to center conductors 74R and 74L, but are disposed at an angle of 45 degrees on either side therein (see Fassett; column 9, lines 52 to 54). We note that the examiner

interprets conductors 74R, 74L, 130, and 132 as being first and second feed lines (Answer, page 4). We conclude that Fassett does not teach the "orthogonal" limitation of claim 9, since the first and second feed lines are required to be "orthogonal" to each other, and not within 45 degrees from each other.

Lastly, we note appellant's means-plus-function argument pertaining to claim 15 (Reply Brief, pages 4 to 5). Appellant avers that claim 15's "spacer means" as described in the specification is not taught by Watanabe. This type of 35 U.S.C. § 112, sixth paragraph, argument is not properly raised at such a late point in the prosecution. Appellant failed to raise this argument in the original Brief, and such an argument is not made in response to a new issue raised by the examiner in the Answer. Accordingly, appellant has waived this argument and we will not consider it at this late stage.

Therefore, we conclude that appellant's claims 9, 10, and 15 to 17 are not anticipated by either Watanabe or Fassett, because the important recited feature of appellant's claims on appeal of a coupling device smaller than, and spaced from, first and second cavity walls is neither expressly nor inherently disclosed by either of the applied references.

In view of the foregoing, the decisions of the examiner rejecting claims 9, 10, and 15 to 17 under 35 U.S.C. § 102(b) are reversed.

REVERSED

Appeal No. 96-0625
Application 08/044,113

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Administrative Patent Judge)	
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)	
)	BOARD OF PATENT
LEE E. BARRETT)	
Administrative Patent Judge)	APPEALS AND
)	
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