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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DENIS TUAU and ARMEL LEBAYON

Appeal 2018-006334
Application 14/374,886
Technology Center 2800

Before KAREN M. HASTINGS, GEORGE C. BEST, and
JEFFREY R. SNAY, *Administrative Patent Judges*.

SNAY, *Administrative Patent Judge*.

DECISION ON APPEAL¹

Appellant² appeals under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 1, 2, and 4–14. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

¹ We refer to the Specification (“Spec.”) filed July 25, 2014; Final Office Action (“Final Act.”) dated November 25, 2016; Appellant’s Appeal Brief (“App. Br.”) filed December 4, 2017; Examiner’s Answer (“Ans.”) dated April 2, 2018; and Appellant’s Reply Brief (“Reply Br.”) dated June 4, 2018.

² Appellant is Applicant, Alcatel Lucent, which the Appeal Brief identifies as the real party in interest. App. Br. 1.

BACKGROUND

The subject matter of the application on appeal relates to a subreflector of a dual-reflector antenna. Spec. 1–2. Claim 1—the sole independent claim on appeal—reads:

1. A subreflector of a dual-reflector antenna comprising:
 - a first extremity comprising an internal convex surface;
 - a second extremity adapted to be coupled with the extremity of a waveguide; and
 - a body extending between the first extremity and the second extremity, comprising a first dielectric part having a portion penetrating into the waveguide and a portion external to the waveguide, and a second part comprising a first cylindrical portion contiguous to the first extremity of the subreflector whose diameter is greater than the portion outside the waveguide of the first dielectric part;wherein the second part is metallic and further comprises:
 - a second cylindrical portion adjacent to the first cylindrical portion, extended by a conical portion that penetrates into the first dielectric part;*a flat ring-shaped surface, supported by the first cylindrical portion, which forms a less-than-90° angle with the axis (X-X') of the subreflector calculated so as to reflect the signal towards the center of the primary reflector; and*
 - wherein the flat ring-shaped surface:
 - is disposed within the outer cylindrical wall delimiting the first cylindrical portion; and
 - faces the primary reflector.

App. Br. 11 (Claims Appendix) (emphasis added to highlight a key recitation in dispute).

REJECTIONS

- I. Claims 1, 2, 4–6, and 12–14³ stand rejected under 35 U.S.C. § 103(a) as unpatentable over Sanford⁴ and Brandau.⁵
- II. Claims 7–11 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Sanford, Brandau, and Sanford '590.⁶

OPINION

Relevant to Appellant's arguments on appeal, the Examiner finds that Sanford discloses a subreflector having a first dielectric part **3** that penetrates a waveguide, and a second part **5** that includes a flat ring-shaped surface **17**. Final Act. 3–4 (citing Sanford Figs. 1B, 3). Sanford's Figures 1B and 3 are reproduced below:

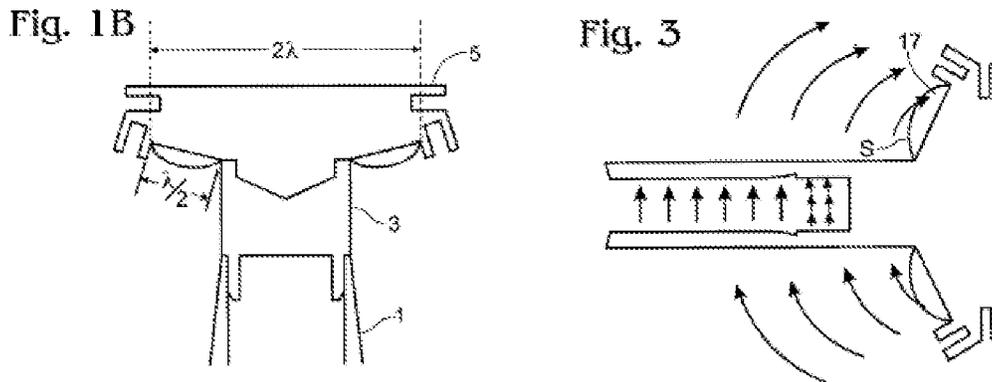


Figure 1B is a cross-section schematic of a subreflector joined via a spacer to a feed tube. Sanford 3:56–60. Figure 3 is a cross-section

³ Claim 3, which the Examiner identifies as rejected but does not otherwise address (*see* Final Act. 2–7), is canceled.

⁴ US 5,973,652, issued October 26, 1999 (“Sanford”).

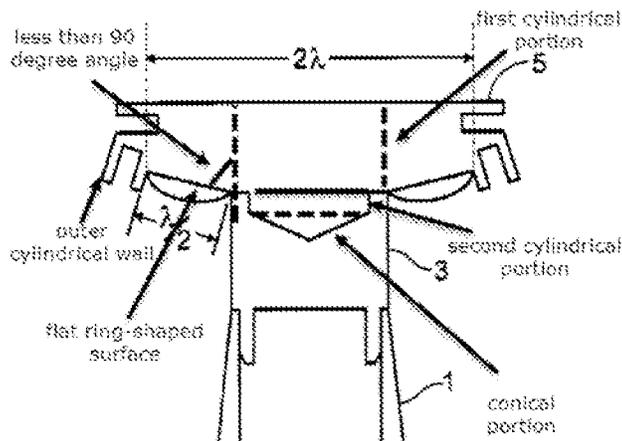
⁵ US 2013/0057444 A1, published March 7, 2013 (“Brandau”).

⁶ US 5,959,590, issued September 28, 1999 (“Sanford '590”).

schematic of a subreflector showing primary reflecting surface 17 on which a standing wave **S** is set up during use. *Id.* at 3:49–63.

Appellant argues, *inter alia*, that the primary reflecting surface 17 in Sanford’s device “forms a more-than-90° angle with the axis of the subreflector.” App. Br. 8. For that reason, Appellant contends that the Examiner erred in finding that Sanford’s reflecting surface 17 is a flat ring-shaped surface “which forms a less-than-90° angle with the axis (X-X’) of the subreflector,” as is recited in claim 1. *Id.*

In response, the Examiner states that claim 1 encompasses either complementary angle measured between the reflecting surface 17 and the main axis of the subreflector. Ans. 3, 6. The Examiner produces an annotated version of Sanford’s Figure 1B to indicate the angle relied upon to meet the disputed claim recitation. *Id.* at 3. We reproduce the Examiner’s annotations below:



Examiner’s annotated version of Sanford Figure 1B.

Appellant replies that the Examiner’s claim interpretation disregards the language in claim 1 that the recited less-than-90° angle is “calculated so

as to reflect the signal towards the center of the primary reflector.” Reply Br. 4.⁷

We are persuaded of reversible error. Both Sanford and the instant Specification depict a primary reflector having a center which is aligned with a central axis of the subreflector. Sanford Fig. 9; Spec. Fig. 4. Claim 1 requires that the angle of the reflective surface is calculated such that signal is reflected toward the primary reflector’s center. To that end, claim 1 requires that the reflective surface faces the primary reflector and forms an acute angle relative to the subreflector’s axis. In contrast, Sanford’s reflective surface **17**, when viewed from the side that faces the primary reflector, forms an obtuse angle relative to the subreflector’s axis. Sanford Fig. 9. The Examiner’s reliance on the complement of that angle in Sanford fails to account for the further requirement in claim 1 that the recited angle results in signal reflection toward the primary reflector’s center. Sanford’s Figure 9 depicts reflection that is directed away from the primary reflector’s center, and the Examiner does not present any finding that Sanford’s oppositely-angled surface would yield any reflection toward the primary reflector’s center. Neither Brandau nor Sanford ’590 is relied upon in a manner that overcomes the foregoing deficiency in the Examiner’s reliance on Sanford.

For the foregoing reasons, we are persuaded that the Examiner does not present findings sufficient to support a determination of obviousness with regard to claim 1. Accordingly, Rejections I and II are not sustained.

⁷ Appellant’s Reply Brief is not paginated. Our citation to page 4 of the Reply Brief refers to the fourth consecutive page of that document.

Appeal 2018-006334
Application 14/374,886

DECISION

The Examiner's decision rejecting claims 1, 2, and 4–14 is reversed.

REVERSED