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MCCOY RUSSELL LLP 806 SW Broadway Suite 600 Portland, OR 97205			NGUYEN, DUC MINH	
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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* ALEXANDER VOISHVILLO

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Appeal 2017-009175  
Application 14/308,457  
Technology Center 2600

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Before MAHSHID D. SAADAT, CARL L. SILVERMAN, and LILAN  
REN, *Administrative Patent Judges*.

SAADAT, *Administrative Patent Judge*.

DECISION ON APPEAL<sup>1</sup>

Appellant<sup>2</sup> appeals under 35 U.S.C. § 134(a) from the Final Rejection  
of claims 1–20. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

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<sup>1</sup> An oral hearing was held for this appeal on August 15, 2019.

<sup>2</sup> According to Appellant, the real party in interest is Harman International  
Industries, Incorporated. App. Br. 3.

## STATEMENT OF THE CASE

### *Introduction*

Appellant's disclosure is directed to phasing plugs for electroacoustic transducers, which comprise "an inlet side, and outlet side, and a plurality of portions having an anfractuous perimeter and forming apertures therebetween, the plurality of portions and apertures arranged along a central axis and extending from the inlet side to the outlet side." *See* Spec. ¶ 4.

Claim 1, which is illustrative of the invention, reads as follows:

1. A phasing plug for an electroacoustic transducer, comprising:
  - an inlet side;
  - an outlet side;
  - a front surface on an outer surface of the inlet side; and
  - a plurality of portions having an anfractuous perimeter along the front surface and forming apertures therebetween, the plurality of portions and apertures arranged along a central axis and extending from the inlet side to the outlet side.

### *The Examiner's Rejection*

Claims 1–20 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Avera (US 6,064,745; iss. May 16, 2000), Wendell (US 2010/0329495 A1; pub. Dec. 30, 2010), and Sterling (US 2011/0168480 A1; pub. July 14, 2011). *See* Final Act. 3–11.

## ANALYSIS

In rejecting claim 1, the Examiner finds Avera discloses all the recited elements of the claim including a phasing plug having inlet and outlet sides, a plurality of portions forming apertures extending from the inlet side to the

outlet side. Final Act. 3 (citing Avera Fig. 1). The Examiner relies on Figure 4 of Wendell as disclosing “the portion having circular perimeter along the front surface,” but not an anfractuous perimeter, for which the Examiner relies on Sterling. *See id.* The Examiner specifically relies on Figures 1–6 of Sterling which shows a star like opening as the recited portions having an anfractuous perimeter. *See id.* The Examiner presents the following reasoning:

It would have been obvious to a person of ordinary skill of the art at the time the invention was made to modify to include such star like orifices of Sterling with the circular phase plug of Wendell and the phase plug of Avera for the purpose of providing a smooth output response at high efficiency levels across the entire operating range of the compression driver (see paragraph 8 of Wendell), and to reduce distortion and insertion loss (see paragraph 10 of Sterling).

*See* Final Act. 3–4.

Appellant contends the Examiner’s rejection is in error because Wendell’s circular-shaped aperture does not disclose an anfractuous shape, as recited in the claim and disclosed in the Specification as not being the same as “circular.” *See* App. Br. 12–15. Appellant also argues a person of ordinary skill in the art would not combine Sterling with the horn driver of Avera and Wendell because Sterling is directed to an acoustic lens to be disposed across a conventional loudspeaker instead of a “compression driver.” App. Br. 15. According to Appellant,

Sterling’s acoustic lens, for example, is disposed across a front face of a conventional loudspeaker to modify its coverage pattern (see at least Sterling’s Fig. 19 and associated text), whereas the phasing plugs of Avera and Wendell are disposed between a diaphragm and a horn (Avera, Fig. 7; Wendell, Fig. 7). While the acoustic lens modifies the coverage pattern (i.e.,

directivity) of the loudspeaker in Sterling, in Avera, the horn (not the phase plug) of the compression driver controls coverage pattern (i.e., directivity) (*see* Avera paragraph [0002]). Thus, a phase plug in a compression driver serves a different purpose and is included for a different motivation than an acoustic lens in a loudspeaker.

App. Br. 16.<sup>3</sup>

The Examiner responds by pointing out that Wendell discloses an alternative phasing plug including a plurality of portions having an anfractuous perimeter as slots 104 and 106 in Figure 3B which include lines revolving around centerline 100a of a phase plug. Ans. 4. With respect to the combination of the references, the Examiner explains Sterling was relied on “to show evidence of the sinuous pattern apertures of a phase plug” and “[i]t would have been obvious to a person of ordinary skill in the art to contemplate such modification since all 3 references are about phase plug.” Ans. 5–6.

Appellant contends the Examiner’s restated characterization of the circular apertures of Wendell as the recited “plurality of portions having an anfractuous perimeter” in the Answer is still unreasonable in view of the Specification. Reply Br. 2. Additionally, Appellant argues the Examiner’s proposed combination would not be reasonable because there are “structural differences between a phasing plug as taught by Avera or Wendell and an acoustic lens as taught by Sterling.” Reply Br. 4.

Based on a review of Sterling, we are persuaded by Appellant’s contention that the Examiner has not explained how a specific aperture pattern of an acoustic lens, which is used for changing the directivity of

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<sup>3</sup> We do not address Appellant’s other contentions because this contention is dispositive of the issue on appeal.

sound radiation of loudspeakers, suggests the recited apertures on a phase plug that extend from the inlet side to the outlet side. Similarly, the Examiner's explanation with respect to modifying Avera and Wendell with Sterling does not address the deficiencies pointed out by Appellant with respect to the "structural differences" between Sterling and the other two references. Ans. 5–6. The disclosure of Sterling in Paragraphs 105 and 115, at best, discloses an acoustic lens placed in front of the diaphragm of a speaker, which is unrelated to "the plurality of portions and apertures arranged along a central axis and extending from the inlet side to the outlet side," as required by claim 1.

Therefore, based on the record before us, Appellant's arguments have persuaded us of error in the Examiner's position with respect to the rejection of independent claim 1 and independent claims 15 and 18, which recite similar limitations. We therefore do not sustain the rejection of claims 1, 15, and 18, as well as claims 2–14, 16, 17, 19, and 20, dependent therefrom.

#### DECISION

We reverse the Examiner's decision to reject claims 1–20.

REVERSED