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91017	7590	09/05/2018	EXAMINER	
Cantor Colburn LLP - Sikorsky Aircraft Corp. 20 Church Street 22nd Floor Hartford, CT 06103			BONZELL, PHILIP J	
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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* JOSEPH PANTALONE III, JOHN S. CHAPKOVICH III,  
ASHLEY DEVITO, and BRANDON L. STILLE

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Appeal 2017-008529  
Application 14/049,535  
Technology Center 3600

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Before LEE L. STEPINA, RICHARD H. MARSCHALL, and  
ANTHONY KNIGHT, *Administrative Patent Judges*.

MARSCHALL, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant<sup>1</sup> seeks our review under 35 U.S.C. § 134(a) of the  
Examiner's decision rejecting claims 1–20. We have jurisdiction under  
35 U.S.C. § 6(b).

We REVERSE.

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<sup>1</sup> The Appellant is the Applicant, Sikorsky Aircraft Corporation, which the  
Appeal Brief identifies as the real party in interest. Br. 2.

## THE CLAIMED SUBJECT MATTER

The claimed subject matter “relates generally to rotary wing aircraft and, more particularly, to an upturned exhaust system for a rotary wing aircraft.” Spec. ¶ 2. Claims 1, 11, and 20 are independent. Claim 1 is reproduced below.

1. An exhaust system for reducing infrared emissions of a rotary wing aircraft, the exhaust system comprising:
  - a manifold;
    - a mixer assembly including an exhaust inlet for receiving engine exhaust directly from an engine and a mixer configured to intermix secondary air and the engine exhaust, the mixer assembly being in fluid communication with the manifold such that the intermixed engine exhaust and secondary air is ejected into an interior of the manifold;
    - an opening in the manifold, the opening configured to face upwards and away from the rotary wing aircraft; and
    - a chimney including a wall positioned about the opening, the chimney configured to eject an emission of intermixed secondary air and engine exhaust upwards and away from the rotary wing aircraft.

Br. 15 (Claims App.).

## THE REJECTIONS<sup>2</sup>

Appellant seeks review of the following rejections:

1. Claims 1, 2, 9–12, and 18–20 under 35 U.S.C. § 102(b) as anticipated by Zack (U.S. Patent No. 7,823,375 B2, iss. Nov. 2, 2010).

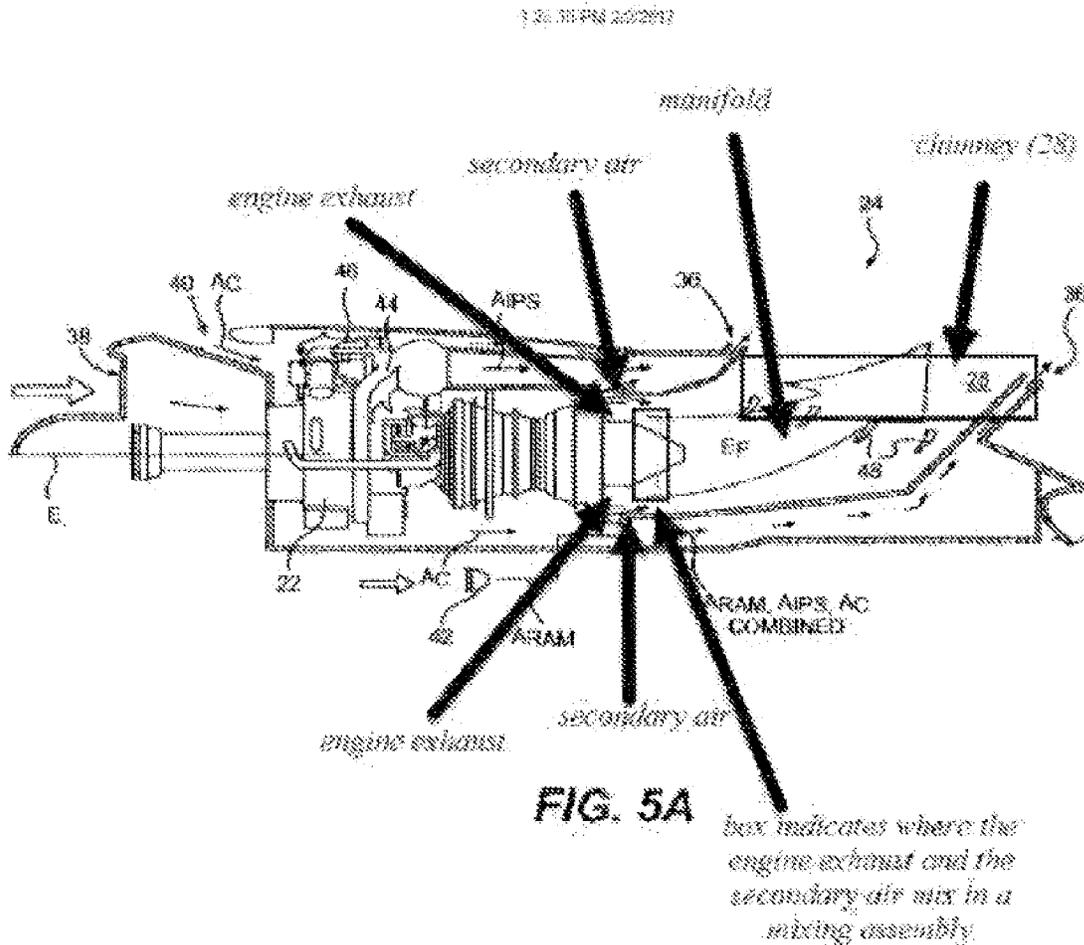
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<sup>2</sup> The claims listed in the headings of the rejections do not match the claims addressed in the analysis. *See* Final Act. 2–7. Our summary of the rejections tracks the claims addressed in the body of each rejection.

2. Claims 3 and 13 under 35 U.S.C. § 103(a) as unpatentable over Zack and Miller (U.S. Patent No. 4,312,480, iss. Jan. 26, 1982).
3. Claims 4–8 and 14–17 under 35 U.S.C. § 103(a) as unpatentable over Zack and Frawley (U.S. Patent No. 6,122,907, iss. Sept. 26, 2000).

### ANALYSIS

Claim 1 requires “a manifold” and “a mixer assembly . . . in fluid communication with the manifold.” Br. 15 (Claims App.). The Examiner found that Zack discloses “a mixer assembly.” Final Act. 2; Ans. 8. The Examiner’s annotated version of Zack’s Figure 5A, appearing at page 8 of the Answer, is reproduced below.



U.S. Patent Nov. 2, 2010 Sheet 5 of 10 US 7,823,175 B2

The annotated Figure 5A depicts the locations in Zack’s structure that the Examiner relies on to find that Zack discloses the claimed manifold and other structures. Regarding the claimed “mixer assembly,” the Examiner points to a rectangle (drawn by the Examiner) that “indicates where the engine exhaust and the secondary air mix in a mixing assembly.” Ans. 8. The rectangle appears to the right of an area labelled “engine exhaust” by the Examiner, and to the left of an area labelled “manifold.” *Id.*

Appellant argues that Zack does not disclose the claimed “mixer assembly.” Br. 9–10. According to Appellant, “Zack clearly teaches that the engine outlet is directly coupled to the manifold 28.” *Id.* at 9. Appellant further contends that the claimed system employs a mixer assembly 102 and manifold 100 that defines two stages of mixing the engine exhaust, while “Zack does not teach or suggest that an additional component or assembly, such as the mixer assembly . . . is coupled to the outlet of the engine and is configured to provide an additional stage of mixing.” *Id.*

We agree with Appellant. There is no dispute that Zack discloses the claimed manifold; the dispute is whether the claim requires a structure separate from the manifold to satisfy the “mixer assembly” requirement. We construe claim 1 as requiring some structure distinct from the manifold structure to satisfy the mixer assembly limitation. The claim language supports this reading. Claim 1 requires two distinct structures—a manifold and a separately claimed “mixer assembly.” Br. 15 (Claims App.). The specification also describes two distinct structures corresponding to these limitations, manifold 100 and mixer assembly 102, and provides details regarding the structure of mixer assembly 102. Spec. ¶¶ 24–29, Figs. 2–6.

Under these circumstances, the claimed mixer assembly requires some structure beyond the manifold structure.<sup>3</sup>

The Examiner’s finding that Zack discloses the claimed mixer assembly, best explained in the annotated drawing above, relies on an area within Zack’s manifold “where the engine exhaust and the secondary air mix.” Ans. 8. This finding does not point to any structure to satisfy the mixer assembly limitation, but instead merely points to an area where mixing occurs, using a description that would seemingly apply to the entire manifold (i.e., an area “where the engine exhaust and the secondary air mix”). *Id.* Under these circumstances, we view the Examiner’s analysis as insufficient to support the finding that Zack discloses the claimed “mixer assembly.” We, therefore, do not sustain the rejection of claim 1 as anticipated by Zack.

Independent claims 11 and 20 also require “a mixer assembly.” Br. 16–18 (Claims App.). The Examiner relies on the same findings made with respect to claim 1 in the rejection of independent claims 11 and 20, and Appellant raises the same arguments. Final Act. 3–4; Br. 9–11. We, therefore, do not sustain the rejection of claims 11 and 20, or dependent claims 2, 9, 10, 12, 18, and 19, which ultimately depend from the independent claims and are subject to the same anticipation rejection based on Zack. We also do not sustain the obviousness rejections of claims 3–8 and 13 because the Examiner’s use of Miller and Fawley in those rejections

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<sup>3</sup> We need not construe the claim further in order to resolve the issues in this appeal regarding Zack. For example, it may be possible that a single, integral structure incorporates both a manifold and a mixer assembly. Here, as discussed below, the Examiner does not point to any structure beyond that associated with Zack’s manifold to support the finding that Zack discloses the mixer assembly. *See* Ans. 8.

does not remedy the deficiencies discussed above based on the Examiner's interpretation of Zack. *See* Final Act. 5–7; Ans. 9 (“[T]he Examiner holds that Zack '375 discloses the mixer assembly as claimed and that the Miller '375 and Frawley '907 references were used to teach dependent claim language.”).

#### DECISION

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

REVERSED