

1 UNITED STATES PATENT AND TRADEMARK OFFICE

2  
3  
4 BEFORE THE BOARD OF PATENT APPEALS  
5 AND INTERFERENCES  
6

7  
8 *Ex parte* DIDIER BOURJAC and GERARD CUADRADO  
9

10  
11 Appeal 2008-2612  
12 Application 11/008,194  
13 Technology Center 3600  
14

15  
16 Decided: September 23, 2008  
17

18  
19 *Before* WILLIAM F. PATE III, MURRIEL E. CRAWFORD, and  
20 MICHAEL O'NEILL, *Administrative Patent Judges.*

21  
22 CRAWFORD, *Administrative Patent Judge.*  
23

24  
25 DECISION ON APPEAL  
26

27 STATEMENT OF CASE

28 Appellants appeal under 35 U.S.C. § 134 (2002) from a final rejection  
29 of claims 1, 4 to 7, 9 to 11, 13 to 16 and 22. We have jurisdiction under  
30 35 U.S.C. § 6(b) (2002).

1 Appellants invented a modular anti-icing device for an aerodynamic  
2 surface (Specification 1).

3 Claim 1 under appeal reads as follows:

4 1. An anti-icing/de-icing device for an aircraft wing, said  
5 wing including at least one first aerodynamic surface  
6 possessing at least two anti-icing/de-icing modules, each  
7 module being provided with a respective heater element,  
8 wherein the heater elements of said modules are powered  
9 electrically via a common electrical power supply means, each  
10 anti-icing/de-icing module acting against icing in its own zone  
11 independently of the other module(s).

12

#### 13 REFERENCES

14 The prior art relied upon by the Examiner in rejecting the claims on  
15 appeal is:

16	Volkner ('476)	3,420,476	Jan. 07, 1969
17	Volkner ('457)	4,036,457	Jul. 19, 1977
18	Wilson	EP 0 680 878 A1	Nov. 08, 1995

19

#### 20 REJECTIONS

21 The Examiner rejected claims 1, 4, 7, 9, 10, 11, and 13 to 16  
22 under 35 U.S.C. § 102 (b) as being anticipated by Wilson.<sup>1</sup>

23 The Examiner rejected claims 1 and 14 under 35 U.S.C. § 102(b) as  
24 being anticipated by Volkner '457.

25 The Examiner rejected claims 1, 4 and 5 under 35 U.S.C. § 102(b) as

---

<sup>1</sup> The Examiner has filed a correction to Grounds of Rejection section in the Answer to add claim 9 to this rejection.

1 being anticipated by Volkner '476.

2 The Examiner rejected claims 10 to 11 under 35 U.S.C. § 103(a) as  
3 being unpatentable over Wilson.

4 The Examiner rejected claim 6 under 35 U.S.C. § 103(a) as being  
5 unpatentable over Volkner '476 in view of Volkner '457.

6 The Examiner rejected claim 22 under 35 U.S.C. § 103(a) as being  
7 unpatentable over Volkner '476 in view of Volkner '457.

8 Appellants contend that none of the references cited discloses anti-  
9 icing/de-icing modules acting against icing in its own zone independently of  
10 the other modules.

11 Appellants also contend that neither Volkner '457 nor Volkner '476  
12 discloses anti-icing/de-icing modules each including respective regulators  
13 arranged to operate respective heater elements independently of every other  
14 regulator of other modules.

15  
16

## ISSUES

17 The first issue is whether the Appellants have shown that the  
18 Examiner erred in finding that Wilson, Volkner '457, and Volkner '476  
19 disclose anti-icing/de-icing modules acting against icing in its own zone  
20 independently of the other modules.

21 The second issue is whether the Appellants have shown that the  
22 Examiner erred in finding that Volkner '476 discloses anti-icing/de-icing  
23 modules, each including respective regulators arranged to operate respective  
24 heater elements independently of every other regulator of other modules.

25  
26

FINDINGS OF FACT

1  
2 (1) Appellants disclose a system of modules of anti-icing/de-icing for an  
3 aerodynamic surface. As seen in Figure 1, a blades P of a rotocraft have  
4 several modules 17 disposed thereon (Specification 5). Each module  
5 provides anti-icing/de-icing of the blade in its own zone (Specification 5).  
6 Appellants also disclose that each module provides the anti-icing and de-  
7 icing independently of the adjacent module so that a first portion of the blade  
8 can be de-iced and a second portion of the blade can be anti-iced while no  
9 anti-icing/de-icing is being taken in the third and fourth portions of the blade  
10 (Specification 5). Appellants further disclose that each module 17 operates  
11 and is managed independently of the others (Specification 10). Each module  
12 includes a regulator which receives a signal from a temperature sensor and  
13 an ice sensor to thereby control a heater element (Specification 6).

14 (2) Wilson discloses an anti-icing/de-icing device for an aircraft having  
15 de-icing modules and heater element. The modules are cycled on and off in  
16 accordance with a cycling scheme (col. 7, ll. 57 to 58). In this cycling  
17 scheme, one module may be energized while others are not. The energized  
18 module acts independently when the other modules are not energized i.e.  
19 when module A is energized and the other modules are not, module A acts  
20 against icing in its zone without the assistance and therefore independently  
21 of the modules that are not energized.

22 (3) Volkner '457 discloses an anti-icing/de-icing device for an aircraft  
23 having de-icing modules 11 and heater elements (col. 2, ll. 50 to 60). The  
24 modules are energized sequentially (col. 4, ll. 10 to 15). As such one  
25 module is energized while others are not. The energized module acts

1 independently when the other module are not energized i.e. when one  
2 module is energized and the other modules are not, the energized module  
3 acts against icing in its zone without the assistance and therefore  
4 independently of the other modules that are not energized.

5 (4) Volkner '476 discloses an anti-icing/de-icing device for an aircraft  
6 having de-icing modules 11 and heater elements (col. 3, ll. 42 to 45). The  
7 modules are energized sequentially according to a predetermined heating  
8 cycle. As such one module is energized while others are not. The energized  
9 module acts independently when the other module are not energized i.e.  
10 when one module is energized and the other modules are not, the energized  
11 module acts against icing in its zone without the assistance and therefore  
12 independently of the other modules that are not energized.

13

14

#### ANALYSIS

15 We are not persuaded of error on the part of the Examiner by  
16 Appellants' argument that Wilson, Volkner '457, and Volkner '476 do not  
17 disclose anti-icing/de-icing modules acting against icing in its own zone  
18 independently of the other modules. We agree with the Examiner that since  
19 in each reference the anti-icing/de-icing modules are cycled on and off, an  
20 individual module acts alone on its own zone without the assistance of the  
21 other modules. The action of the module alone on the icing in its own zone  
22 is an independent action as the de-icing is not dependent on the other  
23 modules. While the Specification may disclose that a first portion of the  
24 blade can be de-iced and a second portion of the blade can be anti-iced while  
25 no anti-icing/de-icing is taking place in the third and fourth portions of the

1 blade and that therefore each module is managed independently of the  
2 others, claim 1 does not recite this independent management. Claim 1  
3 recites that the modules act against the icing in their own zone independent  
4 of the other modules. The claim language is therefore broad enough to  
5 cover a system in which each module is energized sequentially because the  
6 modules act alone in their respective zones, without the assistance of the  
7 other modules.

8         Therefore, we will sustain the Examiner's rejections of claim 1 under  
9 35 U.S.C. § 102(b) as being anticipated by Wilson. We will also sustain this  
10 rejection as it is directed to claims 4, 7, 9 to 11 and 13 to 16 because the  
11 Appellants have not argued the separate patentability of these claims. We  
12 will also sustain the Examiner's rejections of claim 1 under 35 U.S.C.  
13 § 102(b) as being anticipated by Volkner'457. We will also sustain this  
14 rejection as it is directed to claim 14 because the Appellants have not argued  
15 the separate patentability of these claims. Further, we will sustain the  
16 Examiner's rejections of claim 1 under 35 U.S.C. § 102(b) as being  
17 anticipated by Volkner '476. We will also sustain this rejection as it is  
18 directed to claims 4 and 5 because the Appellants have not argued the  
19 separate patentability of these claims.

20         We will also sustain the Examiner's rejection of claims 10 and 11  
21 under 35 U.S.C. § 103 as being unpatentable over Wilson because the  
22 Appellants have not argued this rejection separately but rather rely on the  
23 arguments advanced in response to the rejection of claim 1 under 35 U.S.C.  
24 § 102(b) (Brief 7). We will also sustain the rejection of claim 6 under

1 35 U.S.C. § 103 as being unpatentable over Volkner '476 in view of Volkner  
2 '457 because the Appellants do not advance separate arguments in regard to  
3 this rejection but rather relies on the arguments made in response to the  
4 anticipation rejections based on Volkner '476 and Volkner '457.

5 We will also sustain the Examiner's rejection of claim 22 under  
6 35 U.S.C. § 103 as being unpatentable over Volkner '476 in view of Volkner  
7 '457 because the Appellants argue that Volkner '476 and Volkner '457 do  
8 not disclose regulators connected to heaters that operate independently of  
9 every other regulator because both Volkner '476 and Volkner '457 discloses  
10 resistance heaters that are energized in succession. As we have found above,  
11 the heaters are energized and affect their modules without the assistance of  
12 other heaters, the recitation in the claims of independent operation is met.

13 **DECISION**

14 The decision of the Examiner to reject claims 1, 4-7, 9-11, 13-16 and  
15 22 is affirmed.

16 No time period for taking any subsequent action in connection with  
17 this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R.  
18 § 1.136(a)(1)(iv) (2007).

19  
20 **AFFIRMED**

21 Vsh

22

23 YOUNG & THOMPSON  
24 209 MADISON STREET  
25 SUITE 500  
26 ALEXANDRIA VA 22314