

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* JAY K. BASS, JOHN F. McENTEE, TIM J. LAZARUK,  
MARYAM MOBED-MIREMADI, and BRENT T. TOLOSKO

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Appeal 2009-008347  
Application 10/939,952  
Technology Center 1600

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Decided: February 16, 2010

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Before DONALD E. ADAMS, DEMETRA J. MILLS, and  
LORA M. GREEN, *Administrative Patent Judges*.

ADAMS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal under 35 U.S.C. § 134 involves claims 1, 3-24, 26-35, and 37, the only claims pending in this application. We have jurisdiction under 35 U.S.C. § 6(b).

## STATEMENT OF THE CASE

The claims are directed to an apparatus for preparing an array of chemical compounds/biopolymers on the surface of a support. Claims 1 and 4 are illustrative:

1. An apparatus for preparing an array of chemical compounds on the surface of a support, said apparatus comprising;

two elements that are disposed relative to one another to form a gap between said elements wherein the width of said gap is sufficient such that a flow of gas moving outwardly along a perimeter of said gap forms an aerodynamic seal between said two elements and such that said two elements are in a movable relationship relative to one another during said aerodynamic seal and that form a chamber having a controllable interior environment for preparing said array of chemical compounds and a mechanism for introducing a gas into said gap.

4. An apparatus according to Claim 1 wherein one of said two elements comprises a bottom wall and side walls wherein said mechanism for introducing a gas comprises (i) openings along an upper surface of said side walls and (ii) a source of said gas.

The Examiner relies on the following evidence:

Brennan	US 6,001,311	Dec. 14, 1999
Cerrina et al.	US 6,375,903 B1	Apr. 23, 2002

The rejections presented by the Examiner follow:

1. Claims 1 and 3-20 stand rejected under the written description provision of 35 U.S.C. § 112, first paragraph.

2. Claims 1, 3, 5-7, 9-15, 17-22, 24, 27-33, 35, and 37 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Brennan.
3. Claims 4, 6, 23, and 24 stand rejected under 35 U.S.C § 103(a) as unpatentable over the combination of Brennan and Cerrina.

We reverse.

*Written Description:*

ISSUE

Have Appellants established error in the Examiner's conclusion that Appellants' Specification fails to disclose a gap width sufficient to form an aerodynamic seal?

FINDINGS OF FACT

FF 1. The Examiner finds that "page 8, lines 6-8 and 31-33" of Appellants' Specification fails to "define or describe a gap width sufficient to form an aerodynamic seal as newly claimed" (Ans. 3).

FF 2. The Examiner finds that while "page 11, lines 11-16; page 13, lines 20-29; page 18, lines 1-5; and Fig. 1 . . . describe an aerodynamic seal within the gap and illustrate a gap" since Appellants' "specification does not define what is encompassed by the gap width 'sufficient' for forming the seal" (Ans. 10).

FF 3. The Examiner finds that Appellants' Specification "use[s] the phrase 'size of the gap', however the specification does not teach dimensions (e.g. width) encompassed by the 'size'... [or] a positional relationship defined by the 'width'" (*id.*).

FF 4. Appellants' Specification discloses that

An aerodynamic seal between the top element and the bottom element is realized by introducing a gas into the gap between the top element and the bottom element. The pressure of the gas is dependent on a number of factors including the size of the gap, the pressure of any gas introduced into the interior of the chamber formed by the top element and the bottom element, the velocity of the stages, and so forth.

(Spec. 11: 12-16.)

FF 5. Appellants' Specification discloses that "[i]n some embodiments there is a pressure differential from the middle to the edges (both inside and outside) of the seal, established by the size of the gap, the flow through it and the width and profile of the sealing surface. . . . [T]he magnitude of this differential protects against recirculation and entrainment of atmospheric air by having the remaining seal flow predictably exit the seal gap" (Spec. 13: 20-28).

#### PRINCIPLES OF LAW

The Examiner has the initial burden of presenting evidence or reasoning to explain why persons skilled in the art would not recognize in the original disclosure a description of the invention defined by the claims. *In re Wertheim*, 541 F.2d 257, 263 (CCPA 1976).

"In order to satisfy the written description requirement, the disclosure as originally filed does not have to provide *in haec verba* support for the claimed subject matter at issue." *Purdue Pharma L.P. v. Faulding Inc.*, 230 F.3d 1320, 1323 (Fed. Cir. 2000). A disclosure provides adequate written description if it conveys with reasonable clarity to those skilled in the art that the inventor was in possession of the invention. *See id.*

## ANALYSIS

The apparatus of Appellants' claim 1 comprises, *inter alia*, two elements separated by a gap that has a width sufficient to allow a flow of gas moving outwardly along a perimeter of the gap to form an aerodynamic seal between the elements. In contrast, Appellants' claim 21 requires two (top and bottom) elements that are separated by a gap, wherein an aerodynamic seal between the two elements comprises a flow of gas outwardly along a perimeter of said gap.

While the Examiner does not dispute that Appellants' Specification has written descriptive support for Appellants' claim 21, the Examiner asserts that Appellants' Specification "provides no description of a gap width 'sufficient' for forming an aerodynamic seal. Hence, one of skill in the art would not understand that Appellant had possession of the claimed invention at the time of filing" (Ans. 11). In this regard, the Examiner inquires as to whether the term "'width' define[s] the distance between the top element . . . and bottom element . . . or . . . the distance between side walls" (Ans. 10-11). We are not persuaded by the Examiner's inconsistent position.

While claim 21 does not include a phrase defining the width of the gap as sufficient to form an aerodynamic seal, there is no doubt that the gap in claim 21 has a width and that this width is sufficient to form an aerodynamic seal as required by the claim. As Appellants' Specification discloses an aerodynamic seal between two elements is realized by introducing a gas into the gap between the two elements and that the pressure of the gas introduced into the gap is dependent upon, *inter alia*, the size of the gap (FF 4). Accordingly, if there is adequate written descriptive

support in Appellants' Specification for claim 21 then, absent persuasive reasoning and/or evidence from the Examiner, this same disclosure would cut against the Examiner's concern regarding claims 1 and 3-20.

In sum, we find that the Examiner failed to provide a sufficient evidentiary basis on this record to support his conclusion that Appellants' Specification fails to provide written descriptive support for the phrase "wherein the width of said gap is sufficient such that a flow of gas moving outwardly along a perimeter of said gap forms an aerodynamic seal between said two elements" (Ans. 3). Accordingly, we agree with Appellants' contention that a person of ordinary skill in this art reading Appellants' Specification (*see e.g.*, FF 4 and 5) "would not doubt that the Appellants had possession of the claimed invention" (App. Br. 13).

#### CONCLUSION OF LAW

Appellants established error in the Examiner's conclusion that Appellants' Specification fails to disclose a gap width sufficient to form an aerodynamic seal.

We reverse the rejection of claims 1 and 3-20 under the written description provision of 35 U.S.C. § 112, first paragraph.

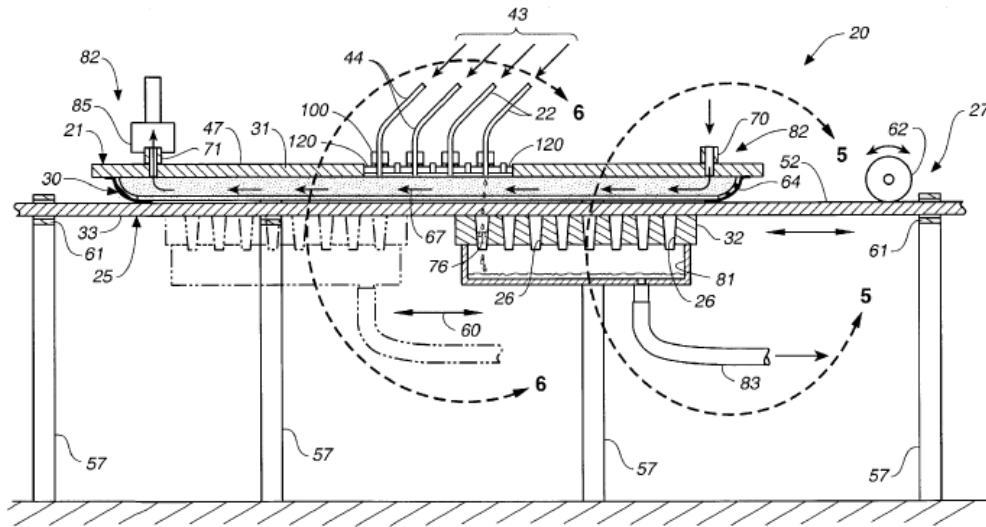
*Anticipation:*

### ISSUE

Have Appellants established that Brennan fails to teach an apparatus wherein an aerodynamic seal is formed by the flow of gas moving outwardly along a perimeter of a gap between two elements as required by Appellants' claimed invention?

### FINDINGS OF FACT

FF 6. For clarity we reproduce Brennan's Figure 3 below:



**FIG. 3**

“FIG. 3 is a side elevation view, in cross-section of the chemical synthesis array apparatus of . . . [Brennan's invention] showing the sweeping action of the flow of inert gas through the common chamber and showing a cross-sectional view through the sliders and sliding seals of the nozzle columns” (Brennan, col. 5, ll. 42-46).

FF 7. The Examiner finds that a gap exists between head assembly (21) and base (25) of Brennan's apparatus and that these two elements are in a

sealed, movable relationship that maintains an aerodynamic seal within the gap (Ans. 3).

FF 8. The Examiner finds that “[t]he aerodynamic seal is evidenced by the arrows illustrating gas flow going from left to right in Fig. 3, but not going down through the reaction sites (#76)” and “is provided by maintaining a positive pressure within the chamber to control flow through the chamber, wherein the chamber is relatively small such that the gas flow can ‘sweep or flush’ the chamber” (Ans. 4).

FF 9. The Examiner finds that the gas flow in Brennan’s apparatus “sweeps the perimeter because the perimeter is part of the chamber which is swept. This is evidenced by the fact that if a leak occurs, it escapes along the edge” (Ans. 12).

FF 10. Brennan teaches that “it is important to normally maintain a minimum positive pressure inside common chamber **31** at all times during synthesis which is slightly greater than atmospheric pressure so that the flow of gas, should a leak occur, would be outward” (Brennan, col. 14, ll. 22-26).

#### PRINCIPLES OF LAW

“[T]he [E]xaminer bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability.” *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). On appeal to this Board, Appellants must show that the Examiner has not sustained the required burden. *See Ex parte Yamaguchi*, 88 USPQ2d 1606, 1608 and 1614 (BPAI 2008) (precedential).

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior

art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987).

## ANALYSIS

The Examiner interprets Appellants’ claims as encompassing the “flow of gas so as to flush or sweep the chamber as taught by Brennan” (Ans. 4; FF 8-9). In this regard, the Examiner reasons that Appellants’ claims do

[N]ot limit gas flow such that the [sic] flows only to the perimeter, but encompasses the entire chamber which includes the perimeter. . . . Gas flow sweeping the chamber, also sweeps the perimeter because the perimeter is part of the chamber which is swept. This is evidenced by the fact that if a leak occurs, it escapes along the edge. If the sweeping did not also sweep the perimeter, no gas would reach the edge and hence could not possibly leak.

(Ans. 12; FF 9.) We are not persuaded.

Appellants’ claims require a flow of gas outwardly along a perimeter of a gap. In Brennan the gas flows *along* a perimeter of a gap, not outwardly *along* the perimeter (FF 6-8). As the Examiner realizes, the gas in Brennan’s apparatus flows outwardly only if a leak develops in the perimeter (FF 9-10). Accordingly, we agree with Appellants’ contention that in Brennan’s apparatus, an outward flow of gas only occurs if a “leak” occurs and then the “outward flow of gas from a leak . . . would occur at one point (i.e., the leak site) on the perimeter and not along the ‘length of such a boundary’” (App. Br. 15).

## CONCLUSION OF LAW

Appellants established that Brennan fails to teach an apparatus wherein an aerodynamic seal is formed by the flow of gas moving outwardly along a perimeter of a gap between two elements as required by Appellants' claimed invention.

The rejection of claims 1, 3, 5-7, 9-15, 17-22, 24, 27-33, 35, and 37 under 35 U.S.C. § 102(b) as being anticipated by Brennan is reversed.

*Obviousness:*

## ISSUE

Have Appellants established that the combination of Brennan and Cerrina fails to teach an apparatus wherein an aerodynamic seal is formed by the flow of gas moving outwardly along a perimeter of a gap between two elements as required by Appellants' claimed invention?

## FINDINGS OF FACT

FF 11. The Examiner relies on Brennan as discussed above (*see* Ans. 9).

FF 12. The Examiner finds that Brennan fails to teach "the top or bottom element comprises glass" (*id.*).

FF 13. The Examiner relies on Cerrina to "teach a device . . . comprising two elements disposed relative to each other to form a space between wherein . . . one of the elements comprises glass" (*id.*).

## PRINCIPLES OF LAW

"[T]he [E]xaminer bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability."

*In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). On appeal to this Board, Appellants must show that the Examiner has not sustained the required burden. *See Ex parte Yamaguchi*, 88 USPQ2d 1606, 1608 and 1614 (BPAI 2008) (precedential); *Ex parte Fu*, 89 USPQ2d 1115, 1118 and 1123 (BPAI 2008) (precedential).

“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007). It is proper to “take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *Id.* at 418. *See also id.* at 421 (“A person of ordinary skill is also a person of ordinary creativity, not an automaton.”). In sum, the “suggestion test is in actuality quite flexible and not only permits, but *requires*, consideration of common knowledge and common sense.” *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1367 (Fed. Cir. 2006).

Nevertheless, an invention “composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. . . . [I]t can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

## ANALYSIS

Appellants contend that Cerrina fails to make up for the deficiency in Brennan discussed above (App. Br. 26). In response, the Examiner asserts

Appeal 2009-008347  
Application 10/939,952

that “Brennan is not deficient in teaching this element” of the claims” (Ans. 18). We disagree for the reasons set forth above.

#### CONCLUSION OF LAW

Appellants established that the combination of Brennan and Cerrina fails to teach an apparatus wherein an aerodynamic seal is formed by the flow of gas moving outwardly along a perimeter of a gap between two elements as required by Appellants’ claimed invention.

The rejection of claims 4, 6, 23, and 24 under 35 U.S.C § 103(a) as unpatentable over the combination of Brennan and Cerrina is reversed.

REVERSED

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