

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte THOMAS T. FU

Appeal No. 95-3451
Application No. 08/097,588¹

ON BRIEF

Before GARRIS, WARREN and ELLIS, Administrative Patent Judges.

GARRIS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the final rejection of claims 9 through 11, 13 through 15, 18 through 24 and 30 through 33. The only other claims remaining in the application have been allowed by the examiner.

¹ Application for patent filed July 26, 1993. According to appellant, this application is a continuation of Application 07/874,668, filed April 27, 1992, now abandoned.

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The subject matter on appeal relates to a method of introducing a gas to a chamber, to a method of changing the gas pressure within a chamber and to a processing system having a chamber which gas enters or leaves. The aforementioned methods and system involve a tube disposed through a wall of the chamber wherein the tube includes a gas diffuser through which gas flows. Further details of this appealed subject matter are set forth in illustrative claims 9, 11 and 13 which read as follows:

9. A method of introducing a gas to a chamber, comprising the steps of:

providing at least one tube disposed through a wall of said chamber, said tube including a gas diffuser formed from a porous material disposed thereon, said gas diffuser having a circumferential radius less than or equal to the radius of said tube;

introducing a gas at a selected velocity to said chamber through said tube; and

slowing the velocity of said gas by flowing said gas through said gas diffuser such that gas flow is redistributed through a plurality of microscopic holes in said gas diffuser.

11. The method of claim 9 wherein said gas diffuser is disposed within said tube outside said chamber.

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13. The method of claim 9 wherein the introduction of said gas substantially changes the pressure within said chamber.

The references relied upon by the examiner as evidence of obviousness are:

Arai	5,002,793	Mar.
26, 1991		
Hansen	5,123,375	Jun. 23,
1992		

(filed Oct. 20, 1990)

Claims 9 through 11, 13 through 15, 19 through 24 and 30 through 32 are rejected under 35 U.S.C. § 103 as being unpatentable over Hansen, and claims 18 and 33 are similarly rejected as being unpatentable over Hansen in view of Arai².

We refer to the Brief and to the Answer for a complete exposition of the opposing viewpoints expressed by the appellant and the examiner concerning the above noted rejections.

For the reasons which follow, we will sustain the rejection of claims 9, 10, 13 through 15, 19 through 23, 30 and 31 but not the rejection of claims 11, 18, 24, 32 and 33.

² The appealed claims have been grouped and argued separately as indicated on page 5 of the Brief.

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The appellant "acknowledges that the gas ejector ring 260 disclosed in Figures 12 and 13 [of Hansen] is within the broad description of Appellant's gas diffuser 10" but argues that "[e]ach of the claims on appeal, however, includes limitations which are not disclosed by Hansen" (Brief, page 6).

Specifically, the appellant argues that Hansen contains no teaching or suggestion of the independent claim 9 limitation of "said gas diffuser having a circumferential radius less than or equal to the radius of said tube." We cannot agree. Patentee discloses a processing chamber (e.g., see 104 of Figure 3) having gas injector rings (see 108 and 110 of Figure 3) which are shown more specifically in Figures 12 and 13 as comprising an inlet port 266 leading to ring 264 which supports diffusing means 262 (see columns 22 and 23). Particularly in light of the appellant's previously mentioned acknowledgment, we consider it reasonable and consistent with the subject specification to interpret the appealed claim 9 tube as reading on Hansen's inlet port 266/support ring 264. In re Sneed, 710 F.2d 1544, 1548, 218 USPQ 385, 388 (Fed. Cir. 1983) (application claims are to be given their broadest reasonable interpretation consistent with the specification).

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When this claim is so interpreted, the above noted limitation is satisfied by virtue of the fact that patentee's diffusing means 262 has a smaller circumferential radius than does the outer wall of support ring or "tube" 264.

In light of the foregoing, we will sustain the examiner's § 103 rejection of independent claim 9 and of nonargued dependent claims 10, 15, 30 and 31 as being unpatentable over Hansen.

We will also sustain the § 103 rejection based on Hansen of claims 13, 14 and 19 through 23. This is because we are unpersuaded by the appellant's argument that Hansen contains no teaching or suggestion of the features in claims 13, 14 and 19 which involve changing (e.g., by raising) the pressure within the chamber. Although the chamber pressure is maintained at a constant level during portions of patentee's method, this pressure is unquestionably decreased and increased at other portions (e.g., during the anneal step) of the method; see Table I at columns 9 and 10 as well as lines 37 through 67 in column 13 and lines 16 through 21 in column 14.

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However, we cannot sustain the examiner's § 103 rejection of claims 11, 18, 24, 32 and 33 as being unpatentable over Hansen alone or further in view of Arai. As correctly indicated by the appellant, the applied references contain no teaching, suggestion or incentive concerning the here claimed feature of a gas diffuser disposed outside the chamber. More specifically, the examiner's references do not support a conclusion that such a disposition was even known in the prior art much less that it would have been desirable to so dispose the gas diffuser of Hansen.

The decision of the examiner is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

BRADLEY R. GARRIS)

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Administrative Patent Judge))	
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CHARLES F. WARREN)	BOARD OF PATENT
Administrative Patent Judge))	APPEALS AND
)	INTERFERENCES
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