

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 23

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHE-HOO NG,
EMI ISHIDA,
JAIME M. REYES,
JINNING LIU,
and
SANDEEP MEHTA

Appeal No. 2002-1169
Application No. 09/252,845

ON BRIEF

Before HAIRSTON, FLEMING, and BLANKENSHIP, Administrative Patent Judges.

HAIRSTON, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1 through 22. After submission of the brief, the examiner found claim 14 to be allowable, but for its dependency from a rejected base claim (answer, page 5). Accordingly, claims 1 through 13 and 15 through 22 remain before us on appeal.

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The disclosed invention relates to an ion source in an ion implantation system. A source of electrical power in the ion source is connectable to an electron source to cause the electron source to create charged ions in a source gas to form a charged plasma and to bias the electron source to cause cleansing of a non-dopant component of the source gas by inert gas ion sputtering of the electron source.

Claim 1 is illustrative of the claimed invention, and it reads as follows:

1. For an ion implantation system, an ion source comprising:

a gas source for providing a source gas containing an ion implantation dopant gas and an inert gas;

an electron source surroundable by said source gas and subject to coating by a non-dopant component of said source gas;

a source of electrical power connectable to said electron source to cause said electron source to create charged ions in said source gas to form a charged plasma and to bias said electron source to cause cleansing of said non-dopant component of said source gas by inert gas ion sputtering of said electron source; and

an ion extraction system for controlling charged ions from said charged plasma.

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The references relied on by the examiner are:

Bright et al. (Bright)	5,262,652	Nov. 16, 1993
Gwinn	5,962,858	Oct. 5, 1999
		(filed Jul. 10, 1997)

Claims 1, 3 through 6, 11, 13, 15, 16, 21 and 22¹ stand rejected under 35 U.S.C. § 102(e) as being anticipated by Gwinn.

Claims 2, 7 through 10, 12 and 17 through 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gwinn in view of Bright.

Reference is made to the briefs (paper numbers 17 and 20) and the answer (paper number 18) for the respective positions of the appellants and the examiner.

OPINION

We have carefully considered the entire record before us, and we will reverse the anticipation rejection of claims 1, 3 through 6, 11, 13, 15, 16, 21 and 22, and the obviousness rejection of claims 2, 7 through 10, 12 and 17 through 20.

Among the examiner's findings (answer, page 4) is the statement that "[s]ince the Gwinn apparatus is identical to the apparatus disclosed in the instant application, some of the noble

¹ The statement of the rejection (answer, pages 3 and 4) should have included claims 21 and 22 among the claims found to be anticipated by Gwinn.

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gas ions in the plasma produced by the Gwinn apparatus would inherently clean the electron source along with the arc chamber walls in exactly the same way that occurs in the apparatus claimed in the instant application."

In response, appellants argue (brief, pages 3 and 4) that:

Gwinn does not bias the electron source to cause cleansing, as stated in the Gwinn Summary, column 2, lines 8-18:

" . . . provides for an ion implantation system that employs an ion source for ionizing and implanting into a substrate a noble diluent gas and a particular dopant gas. *The noble diluent gas of the present invention preferably does not react with the dopant gas, or with dopant residue which coats the walls of the ionization chamber of the ion source, thus allowing the ion source to be used for accurate, stable low dose implants. Additionally, the noble diluent gas does not introduce conductivity altering ions, or impurities, into the substrate S* "

It is respectfully submitted that the above makes it evident that the Gwinn system does not bias for cleansing of either the Gwinn walls or the Gwinn electrode and teaches away from cleansing because cleansing would introduce impurities into the substrate, which is to be implanted.

The above is further emphasized in Gwinn column 5, lines 41-49

Based upon the referenced disclosure in Gwinn, appellants argue (brief, page 5) that "Gwinn does not expressly or inherently disclose Appellants' claimed invention." In response to the examiner's citation of a dictionary definition for the term

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"sputter" (answer, page 6), appellants argue (reply brief, page 2) that "the claimed limitation is for a source biased to cause cleansing and not merely to removing or depositing material by the process of sputtering."

To establish inherency, the record (i.e., the extrinsic evidence) "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999). To date, none of the examiner's findings demonstrates that the source of electrical power in Gwinn must of necessity perform the claimed "cleansing." As indicated supra, Gwinn expressly states that such "cleansing" will not be performed in his ion implantation system. Thus, the 35 U.S.C. § 102(e) rejection of claims 1, 3 through 6, 11, 13, 15, 16, 21 and 22 is reversed.

The 35 U.S.C. § 103(a) rejection of claims 2, 7 through 10, 12 and 17 through 20 is reversed because the teachings of Bright fail to cure the noted shortcoming in the teachings of Gwinn.

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DECISION

The decision of the examiner rejecting claims 1, 3 through 6, 11, 13, 15, 16, 21 and 22 under 35 U.S.C. § 102(e) is reversed, and the decision of the examiner rejecting claims 2, 7 through 10, 12 and 17 through 20 under 35 U.S.C. § 103(e) is reversed.

REVERSED

KENNETH W. HAIRSTON)	
Administrative Patent Judge)	
)	
)	
)	BOARD OF PATENT
MICHAEL R. FLEMING)	APPEALS AND
Administrative Patent Judge)	INTERFERENCES
)	
)	
HOWARD B. BLANKENSHIP)	
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KWH:hh

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