

The opinion in support of the decision being entered today was not written for publication in a law journal and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHARLES J. LIBBY and BILLY W. WARD

Appeal No. 2005-2234
Application No. 10/135,005

ON BRIEF

Before KIMLIN, OWENS and FRANKLIN, *Administrative Patent Judge*.
FRANKLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 21 through 50.

Claim 21 is representative of the subject matter on appeal and is set forth below:

21. A charged particle beam system for milling and imaging a work piece, the system comprising:

a housing for housing the workpiece;

a work stage assembly adapted a) for supporting the workpiece, b) for translating the workpiece along a first axis, c) for translating the workpiece along a second axis perpendicular to the first axis and d) for rotating the workpiece about a third axis perpendicular to both the first

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axis and the second axis, said work stage assembly having a work stage axis substantially parallel to the third axis, and the work stage assembly not being tiltable about the first axis or the second axis;

a first particle beam source for interacting with the workpiece, said particle beam source having a first particle beam source axis, the first particle beam source axis oriented at an acute angle greater than 0 degrees with the third axis; and

a second particle beam source for interacting with the workpiece, said second particle beam source having a second particle beam source axis oriented to form an acute angle greater than 0 degrees with the third axis, the particle beam sources being arranged such that one of the particle beam sources can be used to mill the workpiece and the other particle beam source can be used to image the workpiece.

Claims 21, 31, 38, and 41 stand rejected under 35 U.S.C § 103(a) as being obvious over Kaga.

Claims 22 through 25, 28, 32 through 36, 42, 43, and 48 through 50 stand rejected under 35 U.S.C § 103 as being obvious over Kaga in view of Hattori and further in view of Hirose.

Claims 26, 27, 37, 46, and 47 stand rejected under 35 U.S.C § 103 as being obvious over Kaga in view of Miyoshi.

Claims 29, 30, 39, and 40 stand rejected under 35 U.S.C § 103(a) as being obvious over Kaga, Hattori, Hirose, and further in view of Miyoshi.

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Claims 21 through 40 stand rejected under the judicially created doctrine of obviousness-type double patenting as being obvious over claims 1 through 13 of U.S. Patent No. 6,039,000.¹

The examiner applies the following prior art references:

Hattori et al. (Hattori)	4,851,097	July 25, 1989
Miyoshi et al (Miyoshi)	5,569,392	October 29, 1996
Kaga	5,576,542	November 19, 1996
Hirose et al (Hirose)	5,770,861	June 23, 1998
Libby et al. (Libby)	6,039,000	March 21, 2000

We have carefully reviewed appellants' Brief, the Examiner's Answer, and the evidence of record. This review has led us to the following determinations.

OPINION

I. The Obviousness-type Double Patenting Rejection

For the reasons explained in our footnote 1, we affirm this rejection.

¹ We note that appellants do not list this rejection on page 3 of the Brief. We presume that this is because, in a paper filed by appellants on January 21, 2004, on page 10, appellants stated that once the claims in this case have been indicated otherwise allowable, appellants will execute and file an appropriate Terminal Disclaimer. Hence, this rejection is summarily affirmed.

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II. The 35 U.S.C § 103 rejection of claims 21, 31, 38, and 41 as being obvious over Kaga

The examiner's position for this rejection is set forth on pages 3 through 7 of the final office action mailed April 12, 2004. We particularly refer to the paragraph bridging pages 6 through 7 of this final office action. In this paragraph, the examiner concludes that it would have been obvious to have inclined Kaga's first/second particle beam source axis oriented at an acute angle that is greater than 0 degrees, resulting in an acute angle between the first/second beam source axis and the first and second axis. The examiner states that motivation to do so is "to impart an ion beam at an acute angle, greater than 0°, to the substrate." The examiner states further that it would have been obvious to optimize operation of the claimed invention. Final Office Action, page 7.

On page 5 of the Brief, appellants state that in the Advisory Action, the examiner stated that it would be completely obvious "to change Kaga's relative angle theta by changing the position of either Kaga's first and/or second particle beam sources. Further, it is appreciated that because Kaga's stage 2

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(Figures 1 and 6) is shown to tilt, Kaga's 'vertical bore' may still be made." Brief, page 5.

Appellants argue that merely stating that a reference could be modified is insufficient to sustain a rejection. Appellants state that the examiner must provide some motivation other than hindsight to make the modification.

We determine that the examiner's statement that the motivation to modify Kaga is "to impart an ion beam at an acute angle, greater than 0°, to the substrate" is lacking. The initial burden of presenting a prima facie case of obviousness rests on the examiner. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). Where an obviousness determination is based on a combination of prior art references, there must be some "teaching, suggestion or incentive supporting the combination." In re Geiger, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987). "[T]he factual inquiry whether to combine references must be thorough and searching." McGinley v. Franklin Sports, Inc., 262 F.3d 1339, 1351-52, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001). It is impermissible to conclude that an invention is obvious based solely on what the examiner considers to be basic knowledge or common sense. See In re Zurko, 258

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F.3d 1379, 1386, 59 USPQ2d 1693, 1697 (Fed. Cir. 2001). Thus, the burden is on the examiner to identify concrete evidence in the record to support his conclusion that it would have been obvious to modify the teachings of the cited references to achieve the claimed invention. See id.; In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1316-17 (Fed. Cir. 2000). In the present case, the examiner has simply failed to meet this burden.

In making the above determination, however, we refer to the Advisory Action discussed by appellants on page 5 of their Brief. In this Advisory Action, it appears to us that the examiner bases his conclusion of obviousness on incorrect claim interpretation. That is, the examiner states "[f]urther, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim." We believe this may be in reference to the language reproduced below, in bold (claim 21 is reproduced below, with text in bold for emphasis):

21. A charged particle beam system **for milling and imaging a work piece**, the system comprising:

a housing for housing the workpiece;

a work stage assembly adapted a) for supporting the workpiece, b) for translating the workpiece along a first axis,

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c) for translating the workpiece along a second axis perpendicular to the first axis and d) for rotating the workpiece about a third axis perpendicular to both the first axis and the second axis, said work stage assembly having a work stage axis substantially parallel to the third axis, and the work stage assembly not being tiltable about the first axis or the second axis;

a first particle beam source for interacting with the workpiece, said particle beam source having a first particle beam source axis, the first particle beam source axis oriented at an acute angle greater than 0 degrees with the third axis; and

a second particle beam source for interacting with the workpiece, said second particle beam source having a second particle beam source axis oriented to form an acute angle greater than 0 degrees with the third axis, **the particle beam sources being arranged such that one of the particle beam sources can be used to mill the workpiece and the other particle beam source can be used to image the workpiece.**

It appears from the position outlined by the examiner in the Advisory Action that the claim language that recites that one of the particle beams can be used to mill the workpiece and the other particle beam source can be used to image the workpiece does not limit the scope of the claim. We disagree. In view of the aforementioned recitation found in claim 21, it is self-evident that a respective particle beam is oriented in such a fashion in order to perform a respective function of milling or imaging the workpiece. It appears that the examiner

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incorrectly does not consider this aspect of the claimed invention in formulating his obviousness conclusion.

In view of the above, we therefore **reverse** the 35 U.S.C § 103(a) rejection of claims 21, 31, 38, and 41 as being obvious over Kaga. However, we **remand** this application to the examiner for proper claim interpretation as discussed above, followed by a re-evaluation of the applied art with respect to the proper interpretation of the claims.

III. The Other Rejections

Because the other prior art rejections involve the reference of Kaga (among other references), and because the claims involved in these rejections depend upon the independent claims that involve similar language as discussed above, with respect to claim 21, these rejections are also reversed, but the application is remanded for further evaluation of the applied prior art with respect to a proper interpretation of the claim language, as discussed above.

IV. Conclusion

The rejection of claims 21 through 40 under the judicially created doctrine of obviousness-type double patenting as being

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obvious over claims 1 through 13 of U.S. Patent No. 6,039,000 is **affirmed**.

All of the other art rejections are **reversed**.

However, we **remand** this application to the examiner for consideration of issues, including any new grounds of rejection, if need be, pursuant to 37 CFR § 41.50(a)(1) (effective September 13, 2004; 69 Fed. Reg. 49960 (August 12, 2004); 1286 Off. Gaz. Pat. Office 21 (September 7, 2004)); Manual of Patent Examining Procedure (MPEP) § 1211 (8th ed., Rev. 2, May 2004); 1200-29 - 1200-30).

In view of the above remand to the examiner, for further prosecution of this application, this decision is not final for purposes of judicial review. 37 CFR § 41.50(e) (effective September 13, 2004; 69 Fed. Reg. 49960 (August 12, 2004); 1286 Off. Gaz. Pat. Office 21 (September 7, 2004)).

This application is remanded to the examiner, via the Office of a Director of the Technology Center, for appropriate action, in view of the above comments.

This application, by virtue of its "special" status, requires immediate action. See MPEP § 708.01(D) (8th ed.,

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Rev. 2, May 2004; 700-127). It is important that the Board of Patent Appeals and Interferences be informed promptly of any action affecting the appeal in this case. See, e.g., MPEP § 1211 (8th ed., Rev. 2, May 2004; 1200-30).

**AFFIRMED-IN-PART
AND REMANDED**

EDWARD C. KIMLIN)	
Administrative Patent Judge)	
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TERRY J. OWENS)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
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