

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.21

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MICHAEL ARCHANGEL ARANDA, THUY-LINH TRAN BUI,
JAMES BERNARD KEENAN III and TUSHAR R. PATEL

Appeal No. 2004-0429
Application 09/335,289

ON BRIEF

Before THOMAS, HAIRSTON, and MACDONALD, **Administrative Patent Judges**.

MACDONALD, **Administrative Patent Judge**.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1-5, 7-11, 13-18, and 20 under 35 U.S.C. § 102. Claims 6, 12, and 19 have been canceled.

Invention

Appellants' invention relates to a graphics system and method with which thick graphic primitives are drawn by minimizing dependence on drawing algorithms. An offset or

displacement value is calculated based upon the thickness of the graphic primitive. The offset is approximately one half of the thickness of the primitive. Following calculation of the offset value, line drawing parameter values are determined for a line that is parallel to the origin line and displaced from the origin line in a minor axis direction by the displacement of offset value. A loop is then repeated for each grip point in the major axis range of the line. The loop includes an initial step in which a boundary pixel of the thick graphic primitive is drawn using the line drawing algorithm and the line drawing parameter values calculated for the offset line. After the boundary pixel has been drawn, one or more adjacent pixels are drawn using a stepping routine in which the minor axis coordinate of the selected pixel is either decremented or incremented, depending upon the slope of the line, to write the pixels adjacent the boundary pixel. In this fashion, the present invention draws a thick primitive as a sequence of segments that are parallel to the minor axis of the origin line. Because line parameters are calculated for only a single line using the present invention, the setup time required to initiate the drawing of the thick primitive is achieved with a minimum of overhead. Appellants' specification at page 2, lines 4-21.

Claim 1 is representative of the claimed invention and is reproduced as follows:

1. A method of drawing a thick line, comprising:

calculating a displacement D , wherein the displacement is a function of the line thickness W ;

using a line drawing algorithm to determine line drawing parameter values for a single offset line, wherein the offset line is parallel to an origin line and offset from the origin line in a minor axis direction by the displacement;

for each major axis pixel coordinate of the offset line:

selecting a boundary pixel having the major axis pixel coordinate and a first minor axis pixel coordinate determined using the line drawing algorithm;

selecting a set of additional pixels adjacent to the boundary pixel, each having the major axis pixel coordinate, wherein the number of pixels in the set is a function of W ; and

setting each of the selected pixels for subsequent drawing.

References

The reference relied on by the Examiner is as follows:

Fukuzawa 6,297,828 Oct. 2, 2001
(filed June 18, 1997)

Rejections At Issue

Claims 1-5, 7-11, 13-18, and 20 stand rejected under 35 U.S.C. § 102 as being anticipated by Fukuzawa.

Throughout our opinion, we make references to the Appellants' briefs, and to the Examiner's Answer for the respective details thereof.¹

OPINION

With full consideration being given to the subject matter on appeal, the Examiner's rejections and the arguments of the Appellants and the Examiner, for the reasons stated *infra*, we reverse the Examiner's rejection of claims 1-5, 7-11, 13-18, and 20 under 35 U.S.C. § 102.

I. Whether the Rejection of Claims 1-5, 7-11, 13-18, and 20 Under 35 U.S.C. § 102 is proper?

It is our view, after consideration of the record before us, that the disclosure of Fukuzawa does not fully meet the invention as recited in claims 1-5, 7-11, 13-18, and 20. Accordingly, we reverse.

It is axiomatic that anticipation of a claim under § 102 can be found only if the prior art reference discloses every element of the claim. **See In re King**, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986) and **Lindemann Maschinenfabrik GMBH v.**

¹Appellants filed a supplemental appeal brief on March 31, 2003 that fully replaced a defective appeal brief filed January 2, 2003. Appellants filed a reply brief on August 18, 2003. The Examiner mailed an Examiner's Answer on June 16, 2003.

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American Hoist & Derrick Co., 730 F.2d 1452, 1458, 221 USPQ 481, 485 (Fed. Cir. 1984).

With respect to independent claims 1, 7, and 14, Appellants argue at page 7 of the brief, "the claimed invention invokes 'a line drawing algorithm once' to generate parameter values 'for a single offset line', thereby significantly reducing the time involved with drawing a line segment." The Examiner responds in the answer at page 5, Fukuzawa discloses, "the processing is executed once with regard to a straight line, col. 2, lines 6-7." The Appellants rebut this at page 2 of the reply brief by arguing, "[t]he Fukuzawa reference to 'the processing', however, can only be interpreted in light of the text that precedes it", and "'the processing' is described in column 1 lines 42 through column 2 line 5." The Appellants go on to point out, "the Fukuzawa description clearly conveys that a line drawing algorithm is invoked twice for each scan line."

We agree with Appellants' position. Fukuzawa teaches invoking a line drawing algorithm **twice** and the independent claims all require that the line drawing algorithm only be invoked **once**. The Examiner has not met the initial burden of establishing a **prima facie** case of anticipation.

Therefore, we will not sustain the Examiner's rejection under 35 U.S.C. § 102.

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Conclusion

In view of the foregoing discussion, we have not sustained the rejection under 35 U.S.C. § 102 of claims 1-5, 7-11, 13-18, and 20.

REVERSED

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| JAMES D. THOMAS |) | |
| Administrative Patent Judge |) | |
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| |) | BOARD OF PATENT |
| KENNETH W. HAIRSTON |) | |
| Administrative Patent Judge |) | APPEALS AND |
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| ALLEN R. MACDONALD |) | |
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