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BEVER HOFFMAN & HARMS, LLP
901 CAMPISI WAY
SUITE 370
CAMPBELL, CA 95008

EXAMINER	
AISAKA, BRYCE M	

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mserna@beverlaw.com
creddick@beverlaw.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MICHEL L. COTE and CHRISTOPHE PIERRAT

Appeal 2012-010730
Application 12/352,538
Technology Center 2800

Before BRADLEY R. GARRIS, TERRY J. OWENS, and MICHAEL P. COLAIANNI, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

The Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1-10, 12, 13, 15 and 16. Claims 11 and 14 stand objected to by the Examiner (App. Br. 3). We have jurisdiction under 35 U.S.C. § 6(b).

The Invention

The Appellants claim an electronic design automation program, a computer-readable storage medium comprising the program, and a method for executing the program using a computer. Claims 1, 3 and 7 are illustrative:

1. A computer-readable storage device including code segments, to be executed by a computer, relating to a lithographic process technology, the computer-readable medium comprising:

a code segment for receiving a plurality of bins, each bin including a plurality of clusters corresponding to layout data, wherein each cluster represents a plurality of shapes in the layout data, the plurality of shapes having a proximity to each other determined by a grow operation; and

a code segment for phase shifting the plurality of clusters independently of one another.

3. A method of using clusters in electronic design automation, the method comprising:

receiving data for a plurality of bins, each bin including a plurality of clusters, each cluster representing a plurality of shapes in an original layout, the plurality of shapes having a proximity to each other determined by a grow operation; and

using a computer, preparing a phase shifting layout for the original layout by phase shifting each of the plurality of clusters independently of one another.

7. An electronic design automation program to be executed by a computer and stored on a non-transient computer-readable medium, the electronic design automation program comprising:

a source code segment designed to receive layout data in a bin and cluster format, wherein at least one bin includes a plurality of clusters, each cluster representing a plurality of shapes in the layout data having a predetermined spatial relationship to each other as determined by a grow operation; and

a source code segment designed to phase shift the plurality of clusters independently of one another.

The References

Mukai	US 6,303,251 B1	Oct. 16, 2001
Anderson	US 2001/0052107 A1	Dec. 13, 2001
Akutagawa	US 2002/0006562 A1	Jan. 17, 2002

The Rejections

The claims stand rejected under 35 U.S.C. § 103 as follows: claims 1, 3-10, 13 and 16 over Anderson in view of Akutagawa and claims 2, 12 and 15 over Anderson in view of Akutagawa and Mukai.

OPINION

We reverse the rejections and, under 37 C.F.R. § 41.50(b), enter a new ground of rejection of claims 1-16.

Rejections under 35 U.S.C. § 103

We need to address only the independent claims (1, 3 and 7). Those claims require a bin including a plurality of clusters, each cluster representing a plurality of shapes having a proximity to each other determined by a grow operation. To meet that claim requirement the Examiner relies upon Akutagawa (Ans. 6).

Akutagawa grows two shapes (E10, E12) such that a slit (SL) between them is buried and a sole pattern (E14) is formed from the two shapes (¶ 45; Fig. 3).

The Examiner argues that "Akutagawa discloses a grow operation which forms clusters of polygons (Akutagawa Paragraph 45, e.g. – 'plus sizing' and 'one pattern . . . from the data composed of the two patterns')" (Ans. 6) and that "Akutagawa's merged shapes (clusters) are equivalent to clusters because they are one object which represent multiple objects in the initial layout" (Ans. 10).

"'[D]uring examination proceedings, claims are given their broadest reasonable interpretation consistent with the specification.'" *In re*

Translogic Tech. Inc., 504 F.3d 1249, 1256 (Fed. Cir. 2007) (quoting *In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000)).

The Appellants' Specification states that "[a] cluster is a collection of one or more shapes from the layout that are sufficiently distant from other shapes that phase processing is possible without considering such other shapes, e.g. each cluster can undergo phase processing in parallel" (Spec. ¶ 13). The Examiner has not established that the broadest reasonable interpretation of the Appellants' claim term "plurality of clusters" in view of that disclosure encompasses a single merged shape. Thus, the Examiner has not established that even if Akutagawa's sole pattern (E14) formed by a grow operation is a cluster, Akutagawa discloses, or would have fairly suggested, to one of ordinary skill in the art, a plurality of clusters as required by the Appellants' claims.

Accordingly, we reverse the Examiner's rejections.

New ground of rejection

Claims 1-16 are rejected under 35 U.S.C. § 101 as failing to claim patent-eligible subject matter.

"Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title." 35 U.S.C. § 101. The Supreme Court stated in *Bilski v. Kappos*, 130 S. Ct. 3218, 3225 (2010) that "[t]he Court's precedents provide three specific exceptions to § 101's broad patent-eligibility principles: 'laws of nature, physical phenomena, and abstract ideas.' [*Diamond v.*] *Chakrabarty*, [447 U.S. 303,] 309, 100 S. Ct. 2204 [(1980)]."

Determining whether a claimed invention is patent-eligible subject matter requires determining whether the claim is directed toward a patent-ineligible concept and, if so, determining whether the claim's elements, considered both individually and as an ordered combination, transform the nature of the claim into a patent-eligible application. *See Alice Corp. v. CLS Bank Int'l*, 134 S.Ct. 2347, 2350 (2014).

The Appellants' claims recite the abstract idea of independently phase shifting each of a plurality of clusters which each represent a plurality of shapes having a proximity to each other determined by a grow operation, and do not include any element which transforms the nature of the claim into a patent-eligible application. As stated in *Alice*, 134 S.Ct. at 2358, the mere recitation that the Appellants' claimed method (claims 3-6, 11, 12) is executed using a generic computer does not transform the abstract idea into patent-eligible subject matter. Likewise, the mere recitation that the Appellants' computer program is on a generic computer-readable storage medium and includes code segments to be executed by a computer (claims 1, 2, 9, 10) or is to be executed by a generic computer and stored on a non-transient computer-readable medium (claims 7, 8, 13-16) does not transform the abstract idea into patent-eligible subject matter. Moreover, the Appellants' claimed computer program (claims 7, 8, 13-16) is not within any of 35 U.S.C. § 101's four classes of patent-eligible subject matter (process, machine, manufacture, or composition of matter).

Accordingly, claims 1-16 are rejected under 35 U.S.C. § 101 as failing to claim patent-eligible subject matter.

DECISION/ORDER

The rejections under 35 U.S.C. § 103 of claims 1, 3-10, 13 and 16 over Anderson in view of Akutagawa and claims 2, 12 and 15 over Anderson in view of Akutagawa and Mukai are reversed. A new ground of rejection of claims 1-16 has been entered under 37 C.F.R. § 41.50(b).

It is ordered that Examiner's decision is reversed.

This decision contains a new ground of rejection pursuant to 37 C.F.R. § 41.50(b).

37 C.F.R. § 41.50(b) provides that the appellant, *WITHIN TWO MONTHS FROM THE DATE OF THE DECISION*, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

> (1) *Reopen prosecution*. Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner. . . .
>
> (2) *Request rehearing*. Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

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

REVERSED, 37 C.F.R. § 41.50(b)

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