

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte Michael J. Berman and Matthew R. Trattles

Appeal 2007-4071
Application 10/421,421
Technology Center 3700

Decided: February 13, 2008

Before MURRIEL E. CRAWFORD, DAVID B. WALKER and BIBHU R. MOHANTY, *Administrative Patent Judges*.

MOHANTY, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

The Appellants seek our review under 35 U.S.C. § 134 of the Final Rejection of claims 1-20. Claims 1-20 are pending in the application and have been finally rejected. We have jurisdiction under 35 U.S.C. § 6(b) (2002). We REVERSE.

THE INVENTION

The Appellants' claimed invention is directed to a polishing pad. The polishing pad has an upper layer with a first visual characteristic and a lower layer with a second visual characteristic. As the upper layer is eroded away, the lower layer will appear and the removal rate of the upper and lower layers can be visually detected to determine pad conditioning uniformity. (Specification 3:24-4:9). Pads of this type are used in integrated circuit fabrication (Specification. 2:3-4). Claim 1, reproduced below is representative of the subject matter of appeal.

1. A polishing pad comprising:
at least two first layers having a first visual characteristic, the first layers adapted to polish a substrate, and
at least two second layers having at least a second visual characteristic, where the first visual characteristic is visually distinguishable from the second visual characteristic, the second layers adapted to polish the substrate, the at least two first layers interleaved with the at least two second layers,
where the visual distinguishability between the at least two first layers and the at least two second layers provides a visual indication of pad erosion.

THE REJECTIONS

The Examiner relies upon the following as evidence in support of the rejections:

Cheek et al.	US 5,913,713	Jun. 22, 1999
Robinson et al.	US 6,090,475	Jul. 18, 2000
Raeder et al.	US 6,106,661	Aug. 22, 2000

The following rejections are before us for review:

1. Claims 1-2, 4-7, 9-10, and 18-19 are rejected under 35 U.S.C. § 103(a) as unpatentable over Robinson et al.
2. Claims 8, 11-12, and 14-17 are rejected under 35 U.S.C. § 103(a) as unpatentable over Robinson et al. in view of Cheek.
3. Claims 3, 13, and 20 are rejected under 35 U.S.C. § 103(a) as unpatentable over Robinson et al. in view of Cheek and further in view of Raeder et al..

THE ISSUE

The issue is whether the Appellants have shown that the Examiner erred in rejecting independent claims 1 and 11 under 35 U.S.C. § 103(a) as unpatentable over Robinson et al.

This issue turns on whether Robinson et al. discloses or suggests “at least two first layers” having a “first visual characteristic” and “at least two second layers” having a “second visual characteristic” and whether these layers are “interleaved”.

FINDINGS OF FACT

We find the following enumerated findings of fact are supported at least by a preponderance of the evidence¹:

1. Robinson discloses that the pads are dyed so that each succeeding “slice” would be darker (Col. 12:52-59).

¹ See *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Patent Office).

2. Robinson discloses a lay-up technique for forming the pad by curing a first pad layer onto a palate, and applying a second pad layer on it (Col. 7:44-63).

3. Webster's New World Dictionary, Third College Edition (1986) defines "interleaf" as: a leaf, usually blank, bound between the other leaves of a book, for notes etc. The word "interleave" is defined as: to put an interleaf or interleaves in.

ANALYSIS

The rejected independent claims 1 and 11 require the pad to include "at least two first layers" having a "first visual characteristic" and "at least two second layers" having a "second visual characteristic". The claims also require the two first and two second layers to be "interleaved".

The Appellants argue that in Robinson a unitary pad is dyed (Br. 6:6) and that each succeeding dyed slice would be darker (Br. 6:13). The Appellants argue that in Robinson the "successively dyed portions cannot alternate back and forth between two different visual characteristics, but instead must gradually get darker because of the operation of subsequent dying operations" (Br. 6:19-21). We agree. The claims require that the two first layers with a first visual characteristic be interleaved with the two second layers with a second visual characteristic. This inherently requires the first and second visual characteristics to alternate back and forth in some manner. Robinson shows a pad with dyed portions (FF 1) but does not show or suggest that the layers alternate between first and second visual characteristics as claimed.

The Examiner has noted that Robinson describes an embodiment in which the pad may be formed in successive layers (Ans. 4). We agree with the Examiner that Robinson describes this method of constructing the pad in a lay-up technique (FF 2). However, we find no teaching or suggestion in Robinson that this embodiment has two first layers with a first visual characteristic and two second layers with a second visual characteristic which are interleaved and would inherently alternate back and forth between the first and second visual characteristics in some manner.

The Examiner argues that the color of each layer is regarded as an obvious matter of design choice (Ans. 3-4). The Examiner also argues (Ans. 6) that it would have been obvious to modify Robinson to provide any color contrast. We disagree. [R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness" *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). (Also cited in *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007)). We find no articulated reasoning to modify the pad of Robinson to have the specific visual contrast of having two first layers with a first visual characteristic and two second layers with a second visual characteristic which are interleaved and would inherently alternate back and forth between the first and second visual characteristics to meet the limitations in the claims other than hindsight. For this reason, we reverse the rejection of claims 1 and 11.

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The rejections of claims 2-10 and 12-20 do not cure the above deficiencies in the rejection of Robinson et al under 35 U.S.C. § 103(a) and therefore also are reversed.

CONCLUSIONS OF LAW

We conclude that Appellants have shown that the Examiner erred in rejecting claims 1-20 under 35 U.S.C. § 103(a).

DECISON

The decision of the Examiner to reject claims 1-20 is REVERSED.

REVERSED

JRG

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