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D E C I S I O N
of 3 December 2001

Case Number: T 0612/98 - 3.4.3

Application Number: 94304398.4

Publication Number: 0639855

IPC: H01L 21/00

Language of the proceedings: EN

Title of invention:

Apparatus for recognizing the shape of a semiconductor wafer

Applicant:

TOKYO SEIMITSU CO.,LTD.

Opponent:

-

Headword:

Dicing apparatus/TOKYO SEIMITSU

Relevant legal provisions:

EPC Art. 111(1)

Keyword:

"Remittal (yes) - Claims substantially amended"

Decisions cited:

T 1032/92

Catchword:

-



Case Number: T 0612/98 - 3.4.3

D E C I S I O N
of the Technical Board of Appeal 3.4.3
of 3 December 2001

Appellant: TOKYO SEIMITSU CO., LTD
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Mitaka-shi
Tokyo (JP)

Representative: Rackham Stephen Neil
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 13 February 1998
refusing European patent application
No. 94 304 398.4 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: R. K. Shukla
Members: G. L. Eliasson
M. J. Vogel

Summary of Facts and Submissions

I. European patent application No. 94 304 398.4 was refused in a decision of the examining division dated 13 February 1998. The ground for the refusal was that the subject matter of claims 1 to 3 filed with the letter dated 23 December 1997 lacked an inventive step having regard to the prior art document

D2: Patent Abstracts of Japan, vol. 7, No. 226 (E-202) [1371], 7 October 1983 & JP-A-58-116 748.

II. Claim 1 as refused by the examining division reads as follows:

"1. A shape recognising apparatus for recognising the shape of a semiconductor wafer (100), the apparatus comprising an adhesive sheet (102) capable of transmitting light, and on which, in use, the semiconductor wafer is mounted; an image pickup means (3) disposed on one side of the adhesive sheet for picking up an image of the semiconductor wafer and for providing video signals representing the image; a shape recognising unit (6) for recognising the shape of the semiconductor wafer (100) by processing the video signal; and illuminating means (1) for illuminating the adhesive sheet (102), the illuminating means (1) being disposed on the opposite side of the adhesive sheet (102) to the image pickup means (3); characterised by the illuminating means (1) being a surface emitting type comprising light source (8) and a plate (9) for scattering the light source so as to simultaneously illuminate the entire semiconductor

wafer (100) and the surrounding adhesive sheet (102) with uniform light so that an image of the complete semiconductor wafer is received by the image pickup means (3)."

III. The appellant (applicant) lodged an appeal on 30 March 1998, paying the appeal fee on 31 March 1998. A statement of the grounds of appeal was filed on 2 June 1998 together with new claims. The appellant requests that the decision under appeal be set aside and a patent be granted based on the following documents:

Claims: 1 to 3 filed with the statement of the grounds of appeal;

Description: pages 1 to 6, 8 to 19 as originally filed,
page 7 filed with the letter dated 18 February 1997;

Drawings: Sheets 1/7 to 7/7 as originally filed.

In addition, oral proceedings are requested before any decision adverse to the appellant are taken.

IV. Claim 1 according to the appellant's request reads as follows:

"1. A dicing apparatus for dicing a semiconductor wafer (100) into a plurality of semiconductor chips, the apparatus comprising a shape recognising apparatus for recognising the shape of a semiconductor wafer (100), the shape recognising apparatus comprising an adhesive sheet (102) capable of transmitting light, and on which, in

use, the semiconductor wafer is mounted, an image pickup means (3) disposed on one side of the adhesive sheet for picking up an image of the semiconductor wafer and for providing video signals representing the image, a shape recognising unit (6) for recognising the shape of the semiconductor wafer (100) by processing the video signal, and illuminating means (1) for illuminating the adhesive sheet (102), the illuminating means (1) being disposed on the opposite side of the adhesive sheet (102) to the image pickup means (3), wherein the illuminating means (1) is a surface emitting type comprising light source (8) and a plate (9) for scattering the light source so as to simultaneously illuminate the entire semiconductor wafer (100) and the surrounding adhesive sheet (102) with uniform light so that an image of the complete semiconductor wafer is received by the image pickup means (3); an alignment apparatus (16-19) to which the wafer is fed from the shape recognising apparatus for detecting the circuit pattern formed on the wafer and adjusting the orientation of the wafer accordingly; and a cutting blade (11) for dicing the correctly orientated wafer into individual chips."

- V. The appellant argued essentially that, since the claims are now directed to a dicing apparatus, the claimed apparatus deals with a different stage of the process from that of document D2. Thus, a skilled person considering the design of a new dicing apparatus would not consider the document D2, but would rather consider the devices disclosed in one of the following prior art documents:

D1: Patent Abstracts of Japan, vol. 7, No. 49 (E-161)
25 February 1983 & JP-A-57 198 642;

EP-A-0 490 324; and

EP-A-0 288 233.

None of the above documents, however, disclose or suggest the claimed device.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is therefore admissible.
2. Claim 1 which was considered to be contravening the requirement of inventive step in the decision under appeal was directed to a shape recognising apparatus for recognising the shape of a semiconductor wafer. Claim 1 presently under consideration is now directed to an apparatus for dicing a semiconductor wafer having a shape recognising apparatus, an alignment apparatus, and a cutting blade, where the shape recognising apparatus has all the features which were present in claim 1 under consideration in the decision under appeal.
3. The above amendments to claim 1 which the appellant has submitted in the appeal proceedings raise a number of new issues which were not considered during the examination proceedings. Firstly, it needs to be considered whether the amendments comply with the requirements of Articles 123(2) and 84 EPC. Secondly, the arguments given in the statement of the grounds of

appeal regarding inventive step concentrate on the fact that the subject matter of claim 1 is now a dicing apparatus, and therefore, document D2 should no longer be regarded to be the closest prior art. Instead, the appellant suggests three prior art documents as candidates for closest prior art where only document D1 appears to have been considered in the assessment of inventive step during the examination proceedings.

The Board refrains from making any comments as to whether document D2 or any other document should be considered the closest prior art. Nevertheless, the Board notes that the documents JP-A-4-109 652 and JP-A-4-233 250, which were cited in the application as filed (cf. page 13, lines 17 to 24), are both related to a dicing apparatus having a shape recognising apparatus, an alignment apparatus, and a cutting blade, and therefore also appear to be of relevance. These documents, however, do not seem to have been considered in the assessment of inventive step.

4. In the present case, since the appellant no longer seeks the grant of a patent including the subject matter as rejected by the examining division, but has filed a substantially amended text for claim 1 which requires substantial further examination in relation to both the formal and substantive requirements of the Convention, it is clearly appropriate that the case should be remitted to the examining division in accordance with Article 111(1) EPC.

The Board also refers to Decision T 1032/92 (not published in the OJ EPO), where it was stated that the filing of a new request for the first time in the statement of the grounds of appeal, as in the present

case, inevitably leads to undesirable procedural delay.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of the first instance for further examination of the application having regard to the appellant's request as set out in the statement of the grounds of appeal.

The Registrar:

The Chairman:

D. Spigarelli

R. K. Shukla