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D E C I S I O N
of 19 December 2001

Case Number: T 0041/00 - 3.4.2

Application Number: 95104785.1

Publication Number: 0676634

IPC: G01N 21/90

Language of the proceedings: EN

Title of invention:

Optical inspection of container dimensional parameters

Applicant:

OWENS-BROCKWAY GLASS CONTAINER INC.

Opponent:

-

Headword:

-

Relevant legal provisions:

EPC Art. 56, 111(1), 113(1), 115
EPC R. 67

Keyword:

"Incorrect assessment of prior art"
"Third party's observations in the appeal procedure"
"Remittal to the first instance"

Decisions cited:

-

Catchword:

-



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Boards of Appeal

Chambres de recours

Case Number: T 0041/00 - 3.4.2

D E C I S I O N
of the Technical Board of Appeal 3.4.2
of 19 December 2001

Appellant: OWENS-BROCKWAY GLASS CONTAINER INC.
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Toledo
Ohio 43666 (US)

Representative: Blumbach, Kramer & partner GbR
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 27 July 1999
refusing European patent application
No. 95 104 785.1 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: E. Turrini
Members: A. G. Klein
V. Di Cerbo

Summary of Facts and Submissions

- I. The appellant (applicant) has appealed against the decision of the examining division rejecting the European patent application No. 95 104 785.1 (publication No. 0 676 634).

In the decision under appeal the examining division referred *inter alia* to the following documents:

D3: US-A-4 580 045

D5: US-A-5 008 743

D8: *Principles of Optics*, M. Born et al., 6th (corrected) edition, Pergamon Press, GB, 1980; pages 186 and 187 (numbered D8 by the board)

and held that the claimed subject matter did not involve an inventive step within the meaning of Article 56 EPC with regard to the closest prior art represented by the disclosure of document D3 and the teachings of documents D5 and D8.

- II. The appellant requested setting aside of the decision and the grant of a patent on the basis of a set of amended claims submitted with a letter dated 28 November 2001. Oral proceedings were requested on an auxiliary basis only in case the board did not consider it appropriate to remit the case to the first instance.

Claim 1 of the present request is worded as follows:

"1. An apparatus for inspecting containers (14) each having an open mouth (12), comprising

a light source (16) for directing light into the container (14),

a camera (22) having a sensor (24) and a lens system of two lenses (25, 27) and being disposed to form an image (12a) of said container mouth (12), characterized in that

a telecentric lens means (28) is arranged in front of the camera (22) to direct light transmitted through the container mouth (12) into said camera (22),

and in that

said camera (22) includes an iris (26) which is arranged between said two lenses (25, 27) at the focus of said telecentric lens means (28) so as to admit light which is transmitted substantially axially of the container mouth (12) to said sensor (24) and reject light rays that are not parallel to the container and optical axis."

III. During the appeal proceedings, a third party presented observations pursuant to Article 115 EPC and submitted *inter alia* the following document

D7: "Optische Anordnung, elektronische Baugruppen und Programmmodule zur Qualitäts- und Geometriekontrolle von Glaserzeugnissen", Dissertation, G. Kleemann *et al.*; Fakultät für technische Wissenschaften, Technische Hochschule Ilmenau (DE), 1987; cover sheet, pages I to III, 124, 125 and 199, and Annex 4

together with further evidence in support of the public

availability of document D7 before the priority date of the patent application.

- IV. In support of its request the appellant submitted in particular that document D5 failed to disclose the feature of claim 1 that the iris of the imaging lens of the camera was arranged between two lenses of the imaging lens, which feature allowed the arrangement of the telecentric lens in proximity to the imaging lens of the camera. The incorporation of the telecentric imaging system disclosed in document D5 in the apparatus disclosed in document D3 would therefore not result in an imaging system as defined in claim 1.

The appellant also contested that the content of document D7 had been made available to the public before the priority date of the patent application and that it showed a telecentric arrangement as claimed.

Reasons for the Decision

1. The appeal is admissible.
2. *The decision under appeal*
 - 2.1 Both claim 1 of the present request and the claim 1 considered in the decision under appeal are directed to an apparatus for inspecting containers comprising, *inter alia*, a camera having a lens system of two lenses and an iris arranged between the two lenses, and a telecentric lens means arranged so as to direct into said camera light transmitted through the container mouth.

2.2 The decision under appeal is based on the grounds that the use of a telecentric imaging system as disclosed in document D5 and also known from standard reference works on optics as exemplified by document D8 constitutes a well known solution to the problem of inspecting objects subject to dimensional variations in the direction of the optical axis. In particular, in document D5 the telecentric Fresnel lens 2 and the imaging lens 4 constitute the two lens groups of a camera and the pupil 6 constitutes an iris arranged between the two lens groups 2 and 4, and therefore the incorporation of the telecentric imaging system known from document D5 in the inspection apparatus according to document D3 would yield straightaway the subject matter of the claim 1 (see points 3 and 4 of the reasons).

2.3 The board cannot endorse the examining division's conclusions, for the following reasons.

Document D3 discloses an inspection apparatus for containers, comprising a video camera 34 (Figure 1 together with column 2, lines 32 to 65) and a focusing lens system 36 (column 2, lines 46 to 48). The document does not disclose any telecentric arrangement and it is silent as to the position of the iris of the camera.

Document D5 discloses an inspection apparatus comprising a Fresnel lens 2 and a camera 10 including an imaging lens 4 (Figures 1 and 2 together with column 3, lines 34 to 39 and lines 54 to 56). The imaging lens of the camera is schematically represented in Figure 1 by a lens means 4 and a pupil 6. According to the disclosure of the document (see column 3, lines 40 to 45), the pupil 6 represents the entrance

pupil of the imaging lens 4. Therefore, according to the definition of the entrance pupil of an imaging lens (see for instance document D8, second paragraph of section 4.8.2), the entrance pupil 6 is the image of the aperture stop or iris of the imaging lens formed by the lens components of the imaging lens preceding the iris when viewed from the object side. Document D5, however, is silent as to the actual position of the iris of the imaging lens 4. Even if the schematic arrangement shown in Figure 1 were to be interpreted as an indication that the entrance pupil 6 is in front of the imaging lens 4, the position of the iris would still be indeterminate because the iris could then either constitute the entrance pupil itself, or be arranged between two lens components of the imaging lens 4, or be located behind the imaging lens 4.

In addition, the board notes that the telecentric lens means according to claim 1 is defined as a lens distinct from the camera and arranged so as to direct light from the container mouth into said camera, whilst the two lenses between which the iris is arranged are lenses of the camera. As a consequence, the Fresnel lens of document D5, which is mounted in close proximity to the object to be inspected (column 3, lines 49 to 52 and Figure 1), cannot be identified with one of the two lenses between which the iris is to be arranged within the meaning of claim 1, as it was assumed by the examining division in the decision under appeal.

Document D8 is a general textbook on optics. According to the paragraph bridging pages 186 and 187 the entrance pupil of a telecentric optical system is, by definition, at infinity. The document, however, is

silent as to specific implementations of telecentric optical systems and in particular is silent as to telecentric optical systems having the aperture stop or iris arranged between two lens components of the optical system.

Thus, none of the documents D3, D5 and D8 discloses the claimed iris arrangement, so that a combination of their teachings cannot possibly yield an inspection apparatus comprising all the features defined in claim 1, contrary to the examining division's ruling in the decision under appeal. This decision should therefore be set aside.

3. *Further prosecution of the application*

3.1 Document D7, submitted during the appeal proceedings by a third party under Article 115 EPC, is the sole citation to be directed to an apparatus for inspecting the mouth of containers, comprising a telecentric imaging arrangement. The document appears therefore to come closer to the claimed subject matter than any of the prior art citations considered during the examination procedure.

The question of whether document D7 was available to the public at the priority date of the patent is however still open. The appellant has contested that it was part of the prior art, and also raised objections as to the technical content of the document.

3.2 Incidentally, the board notes that the feature of claim 1 relative to the camera comprising an iris arranged between two lens means of the lens system of the camera was not present in the claims as originally

filed.

This feature is based apparently on the specific embodiment disclosed in the description with reference to the optical arrangement schematically represented in Figure 1. The description of this embodiment, however, only refers to the **entrance pupil** and **not to the iris** of the imaging lens of the camera being arranged between two lenses of the lens system of the camera. There is no indication in the file that the examining division has already considered whether the introduction of this feature actually resulted in the claim satisfying the requirements of Articles 84 and 123(2) EPC.

- 3.3 The main duty of the Boards of Appeal is to review decisions under appeal and not to examine for the first time issues not yet considered by the first instance.

Accordingly, taking due account of the observations in paragraphs 3.1 and 3.2 above, and in order not to deprive the appellant of the possibility of having its case considered by two instances, the board, in the exercise of its power under Article 111(1) EPC, considers it appropriate in the circumstances to remit the case to the department of first instance for further prosecution.

4. *Request for oral proceedings*

The request for oral proceedings was maintained by the appellant only in the event that the case would not be remitted to the first instance. Since the case is to be remitted to the department of first instance, oral proceedings before the board need not be appointed.

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 first instance for further prosecution.

The Registrar:

The Chairman:

P. Martorana

E. Turrini