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D E C I S I O N
of 18 January 2005

Case Number: T 0018/04 - 3.5.2

Application Number: 97932037.1

Publication Number: 0910485

IPC: B07C 5/34

Language of the proceedings: EN

Title of invention:

Method and device for detecting liquid containers

Patentee:

Tomra Systems ASA

Opponent:

Bevesys OY

Headword:

-

Relevant legal provisions:

EPC Art. 56, 100

Keyword:

"Unsearched subject-matter (not a ground for opposition)"
"Inventive step (yes)"
"Late submissions of evidence (not admissible)"

Decisions cited:

G 0001/92

Catchword:

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Case Number: T 0018/04 - 3.5.2

D E C I S I O N
of the Technical Board of Appeal 3.5.2
of 18 January 2005

Appellant: Bevesys OY
(Opponent) PL 89
FIN-45101 Kouvola (FI)

Representative: Järveläinen, Pertti Tauno Juhani
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Respondent: Tomra Systems ASA
(Proprietor of the patent) Drengsrudhagen 2
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Representative: Sigh, Erik
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 30 October 2003
rejecting the opposition filed against European
patent No. 0910485 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: W. J. L. Wheeler
Members: J.-M. Cannard
C. Holtz

Summary of Facts and Submissions

I. The opponent appealed against the decision of the opposition division rejecting the opposition filed against European patent No. 0 910 485.

II. The prior art documents:

D1: EP-B-0 174 549,

D4: US-A-4 625 107, and

D10: US-A-4 854 442,

considered during the proceedings before the opposition division, remain relevant to the present appeal.

Prior art documents:

D11: "Burkar och PEF-flaskor i samma automat!",
Canmatic Recycling AB, published October 1995,

D12: English translation of document D11,

D13: Certificate of availability to the public of
document D11, dated 29 December 2003,

D14: User manual of reverse vending machine
Kombiautomat KA20,

D15: English translation of document D14,

D16: Certificate of availability to the public of
document D14, dated 29 December 2003, and

D17: US-A-5 029 694,

were filed for the first time with the appellant's statement of grounds of appeal.

III. Independent claims 1 and 10 as granted read as follows:

Claim 1:

"A method for detecting containers, e.g. bottles of glass or plastic, or cans made of metal, wood, glass or plastic which for the recycling of materials or reuse of the container, are transported in a lying position and with their axis parallel to the direction of transport past a detection zone associated with a detector station containing a video camera, a video image analysis of the container being carried out, comprising the steps of:

- a) analysing a sequence of video images of the container whilst it is conveyed past the video camera, and
- b) determining, during the movement of the container, by means of the image of the container which moves into the detection zone whether the container enters the video camera field of view either mouth first or bottom first, and causing the container to be fed back to a container insertion portion if it comes mouth first, and signalling the need to turn the container so that it is inserted bottom first when reinserted, or causing the container to be conveyed on to a discharge station if it comes bottom first."

Claim 10:

"A device for detecting containers (B), e.g. bottles of glass or plastic, or cans made of metal, wood, glass or plastic, to be reused or recycled, comprising:

means for transporting the containers in a lying position with their axes parallel to the direction of transport, a detector station containing a video camera (109), a detection zone associated with the detector station, and a video analyser (125) for analysing video images of containers (B) transported past the detection zone, wherein

- a) the video image analyser (125) is connected to the video camera (109) in order to analyse a sequence of video images whilst a container (B) is conveyed past the video camera (109), and wherein the video analyser (125) contains:
- b) a calculator component (130) for determining, when the container (B) moves into the detection zone, whether the container enters the video camera field of view mouth first, e.g., top portion or neck of container, or bottom first, and
- c) a control component (130) which causes the container (B) to be fed back to a container insertion portion if it comes mouth first, and which has a signalling means for signalling the need to turn the container so that it is inserted bottom first when reinserted, or causes the container to be fed on to a discharge station if it comes bottom first."

Claims 2 to 9 are dependent on claim 1 and claims 11 to 18 are dependent on claim 10.

IV. Oral proceedings were held on 18 January 2005.

V. The arguments of the appellant opponent can be summarised as follows:

It was unclear whether the method of present claim 1 and the device of present claim 10, which respectively corresponded to one of the various alternative methods and devices covered in independent method claim 1 and apparatus claim 9 according to the originally filed PCT application, were completely searched. Therefore the appellant had conducted a search and found evidence relating to a prior use of a reverse vending machine KA20, which the representative had brought with him to the oral proceedings.

The machine KA20, which was also disclosed in document D14, was shown at an exhibition in October 1995, sold and publicly used in supermarkets in Sweden before the priority date of the patent. Such a prior use of the machine KA20 was proved by photos, drawings and certificates which showed the detection function of the bar code reader of the machine. The appellant experienced difficulties when finding these new pieces of evidence and was not able to file them at an earlier stage of the proceedings.

The bar code reader of the machine KA20 disclosed in document D14 had a scanning area limited to the first coming portion of a container. It could not read the bar code of a standard bottle, which in Sweden had to be located near the bottom of the bottle, if the bottle was erroneously inserted, i.e. inserted mouth first. Such an erroneously inserted bottle was detected and

rejected by the machine KA20. It was obvious to replace the bar code reader of D14 by a video camera to perform the same detection function as the bar code reader. It did not matter whether the orientation of a bottle was detected by a video camera or by other equivalent means, such as the sensors shown in D10.

VI. The arguments of the respondent proprietor can be summarised as follows:

The objection relating to unsearched subject-matter was irrelevant.

The machine in D14 read bar codes on the containers for identifying the containers and the material thereof. There was no indication in D14 that the orientation of bottles bottom first or mouth first was detected and that different actions were taken depending on this orientation. The fact that not readable bottles were rejected by the machine of D14 did not mean that this machine rejected erroneously inserted bottles, and in particular bottles inserted mouth first. There was no indication in D14 that the bottles to be inserted in the machine had bar codes located near their bottom, nor that the bar code reader could only read bar code located at the first coming part of an inserted bottle. The allegation that the bar code reader encountered problems when a bottle was received mouth first was not supported in D14. Such a problem, which indicated a malfunction rather than an intended function of the machine, would simply be solved by choosing a proper bar code reader.

The opponent should not be allowed to submit new evidence of a prior use at the last stage of the proceedings.

VII. The appellant (opponent) requested that the decision under appeal be set aside and that the European patent No. 0 910 485 be revoked.

VIII. The respondent (patentee) requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.

Alleged incomplete search

2. The granted claims 1 to 18 have been maintained unamended throughout the opposition and appeal proceedings. That the claims may contain unsearched subject-matter is not a ground for opposition mentioned in Article 100 EPC and cannot be considered by the Board.

3. The novelty of the subject-matter of claims 1 and 10 has not been disputed by the appellant.

Inventive step

4. Document D14 (understood on the basis of its English translation D15), which was considered by the appellant as the closest prior art, discloses a reverse vending machine KA20 which carries out a method for detecting

containers. This method has in common with the method according to claim 1 only the steps of causing a container to be fed back to a container insertion portion when a particular condition is met and causing the container to be conveyed to a discharge station when it is not.

4.1 D14 does not disclose containers being transported in a lying position past a detection zone associated with a detector station containing a video camera, nor a step of "determining, during the movement of the container, by means of the image of the container which moves into the detection zone whether the container enters the video camera field of view either mouth first or bottom first", as recited in claim 1. This is not disputed by the appellant.

4.2 The Board cannot share the appellant's view according to which D14 discloses a machine detecting whether a container is inserted mouth first or bottom first. In the machine KA20 "not readable bottles will be returned to the customer via ejector". However, there is in D14 no disclosure that bottles having a bar code located near their bottom are not readable when they are inserted in the machine mouth first. Nor is such a feature implied because D14 does not even disclose that the bar code reader of the machine KA20 can only read bar codes located at the first coming portion of an inserted container. Accordingly, neither a step of determining whether a container is inserted mouth first or bottom first, nor a step of transporting a container to a destination depending on its orientation are disclosed in D14.

- 4.3 The appellant has not shown that D14 discloses a step of "signalling the need to turn the container so that it is inserted bottom first when reinserted" following the rejection of a container coming mouth first.
5. Starting from D14 and having regard to the technical effects achieved by the invention, the objective problem addressed by the invention could be seen as providing a method where the manner in which the containers are inserted must be taken into consideration for their transport, as stated in the patent in suit paragraph [0003].
6. The solution to this problem consists in the steps of determining by means of an image of a container whether the container moving into the detection zone of a video camera enters the video camera field either mouth first or bottom first, and signalling the need to turn the container when reinserted after rejection, as recited in claim 1. The Board judges that there is no obvious reason for the skilled person faced with the problem of the invention to consider such steps, and in particular no reason for him to put a video camera in the machine of D14 and determine from the images whether a container is entering the camera's field of view mouth first or bottom first.
- 6.1 In D14, the bar code reader is used for identifying the inserted bottles, but is not disclosed as having a function of determining the orientation of the bottles. Nor is the provision of such a function rendered obvious by D14 since no details are given as to the scanning area of the bar code reader or the location of the bar codes on the bottles. Nor is there anything in

D14 to suggest that the bar code reader could be replaced by means for determining whether a bottle is coming mouth first or bottom first.

6.2 None of the other cited prior art documents discloses a video camera used for determining whether a container is inserted mouth first or bottom first. Nor is such a feature suggested by the teaching of these documents. D1 and D4 concern the use of video cameras for identifying bottles or their contours; D10 describes an apparatus for uprighting bottles whose orientation is detected by photo sensors.

7. The same considerations apply *mutatis mutandis* to the device according to claim 10.

New evidence referred to for the first time in the oral proceedings before the Board of appeal

8. It is possible, as alleged by the appellant, that the machine KA 20 disclosed in D14 has been made available to the public at an exhibition, or sold and publicly used in supermarkets, before the priority date of the patent. However, a prior use of this machine does not implicitly disclose anything beyond its composition or internal structure. Extrinsic characteristics, which were only revealed when the machine was used with bottles having a bar code located near the bottom, cannot be considered as having been made available to the public (G 1/92 OJ EPO 1993, 277, reasons 1.2 and 3). Therefore, the subject-matter of claims 1 and 10 would still *prima facie* be distinguished over the prior art represented by the machine KA20 by at least a step or means for determining by a video camera whether a

container is entering its field of view mouth first or bottom first. Since this feature is a decisive one when assessing inventive step (see points 6 to 6.2 above), the new evidence referred to for the first time during the oral proceedings before the Board was not considered to be *prima facie* so highly relevant that it would be likely to prejudice the maintenance of the patent. Moreover, the granted claims 1 to 18 have been maintained unamended throughout the opposition and appeal proceedings and a late submission of new evidence could not be justified by any new fact or other good reasons put forward by the opponent. Accordingly, the offered new evidence relating to a prior use of the machine KA20 was not admitted in the proceedings.

9. For the foregoing reasons, in the Board's judgement the subject-matter of independent claims 1 and 10 is considered to involve an inventive step within the meaning of Article 56 EPC. The grounds for opposition mentioned in Article 100 EPC thus do not prejudice the maintenance of the patent in suit unamended (Article 102(2) EPC).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

D. Sauter

W. J. L. Wheeler