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**Datasheet for the decision  
of 24 November 2022**

**Case Number:** T 3099/19 - 3.4.02

**Application Number:** 13713554.7

**Publication Number:** 2825841

**IPC:** G01C11/06, G06T7/00, B66B9/08

**Language of the proceedings:** EN

**Title of invention:**

METHOD, DEVICE AND COMPUTER PROGRAMME FOR EXTRACTING  
INFORMATION ABOUT A STAIRCASE

**Patent Proprietor:**

Otto Ooms B.V.

**Opponents:**

Stannah Stairlifts Ltd.  
TK Elevator Innovation and Operations GmbH

**Headword:**

**Relevant legal provisions:**

EPC Art. 56  
RPBA 2020 Art. 13(2)

**Keyword:**

Inventive step - (no)

Amendment after summons - taken into account (no)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**  
**Boards of Appeal**  
**Chambres de recours**

Boards of Appeal of the  
European Patent Office  
Richard-Reitzner-Allee 8  
85540 Haar  
GERMANY  
Tel. +49 (0)89 2399-0  
Fax +49 (0)89 2399-4465

Case Number: T 3099/19 - 3.4.02

**D E C I S I O N**  
**of Technical Board of Appeal 3.4.02**  
**of 24 November 2022**

**Appellant:** Stannah Stairlifts Ltd.  
(Opponent 1) Watt Close, East Portway  
Andover, Hampshire SP10 3SD (GB)

**Representative:** Van Breda, Jacobus  
Octrooibureau Los & Stigter B.V.  
Weteringschans 96  
1017 XS Amsterdam (NL)

**Appellant:** TK Elevator Innovation and Operations GmbH  
(Opponent 2) E-Plus-Straße 1  
40472 Düsseldorf (DE)

**Representative:** Paustian & Partner Patentanwälte mbB  
Oberanger 32  
80331 München (DE)

**Respondent:** Otto Ooms B.V.  
(Patent Proprietor) Lekdijk Oost 27a  
2861 GB Bergambacht (NL)

**Representative:** Arnold & Siedsma  
Bezuidenhoutseweg 57  
2594 AC The Hague (NL)

**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
17 October 2019 concerning maintenance of the  
European Patent No. 2825841 in amended form.**

**Composition of the Board:**

<b>Chair</b>	R. Bekkering
<b>Members:</b>	C. Kallinger
	C. Almberg

## **Summary of Facts and Submissions**

- I. The appeals of opponents 1 and 2 are against the opposition division's decision that, taking into account the amendments made by the patent proprietor ("the proprietor") during opposition proceedings, the patent and the invention to which it related met the requirements of the EPC.
- II. In the statement of grounds, opponent 1 directed its requests at the revocation of the patent and the reimbursement of the appeal fee.
- III. In its statement, also opponent 2 sought the patent's revocation.
- IV. In reply, the proprietor requested that the appeals be dismissed.
- V. In a communication pursuant to Article 15(1) RPBA 2020 the board informed the parties of its preliminary opinion. The board was, *inter alia*, of the opinion that the subject-matter of claim 1 of the main request did not involve an inventive step in view of document D8 combined with document D1.
- VI. Oral proceedings took place on 24 November 2022, during which the proprietor filed an auxiliary request.
- VII. The parties' final requests are as follows.

Opponent 1 requests that the decision under appeal be set aside and that the patent be revoked. Furthermore,

it requests the reimbursement of the appeal fee by virtue of an alleged substantial procedural violation.

Opponent 2 requests that the decision under appeal be set aside and that the patent be revoked.

The proprietor requests that the appeals be dismissed, i.e. that the patent be maintained in amended form based on the claims of the main request found allowable by the opposition division, or that the decision under appeal be set aside and that the patent be maintained in amended form based on the claims of the auxiliary request filed at oral proceedings on 24 November 2022.

VIII. This decision refers to the following documents:

- D1 Davison A. J. et al. "MonoSLAM: Real-Time Single Camera SLAM", IEEE Transactions on Pattern Analysis and Machine Intelligence, June 2007, Vol. 29, No. 6, pages 1052 to 1067
- D8 Eagles T. "Step Change Improvement at Stannah", CONTROL, 2004, Vol. 7, pages 16 to 20, XP055415709

IX. Claim 1 of the main request reads as follows (feature numbering added by the board):

- 1.1 A method for the extraction of information about a staircase by a person, wherein the method is used for making a stair handrail or a stair lift comprising a guide which is installed at the staircase and along which a frame on which a person can be seated can move;
- 1.2 wherein markers are placed on or near the staircase;
- 1.3 wherein use is made of a device comprising

- 1.4 a central processing unit which is loaded with a computer programme,
- 1.5 a digital memory which is connected to the central processing unit,
- 1.6 a camera which is capable of recording a sequence of images, and
- 1.7 output means which are connected to the central processing unit;
- 1.8 wherein the computer programme analyses the sequence of images in real time using image analysis techniques,
- 1.9 extracts information about said staircase comprising at least the spatial position of the markers, and
- 1.10 communicates at least part of said information to the person in real time via the output means.

## **Reasons for the Decision**

1. Main request - Inventive step - Article 56 EPC

The opposition division came to the conclusion, inter alia, that the subject-matter of claim 1 was based on an inventive step in view of a combination of documents D8 and D1. During the appeal proceedings this finding was challenged by both opponents.

- 1.1 Document D8 as closest prior art

The description of the patent describes the closest prior art in paragraphs [0002]-[0004]. D8 is a more detailed description of this prior art and is considered to represent the closest prior art.

This was not contested by the parties.

1.2 Disclosure of document D8 and differences

1.2.1 The opposition division found that D8 failed to disclose features 1.2, 1.9 and 1.10.

1.2.2 The proprietor argued that D8 failed to disclose features 1.3 to 1.10. In particular, D8 failed to provide a real-time analysis of the pictures (feature 1.8), extraction of information about the position of the markers (feature 1.9) and output of the extracted information to the person (feature 1.10) using the device defined in features 1.3 to 1.7.

The proprietor further argued that according to D8, markers were placed on the stair and pictures were taken and sent by mail to a computer for further analysis. Therefore, the method of D8 was not reliable as it failed to disclose that information about the spatial position of markers was analysed, extracted and output to the person in real time.

1.2.3 In contrast to the proprietor's reasoning, the board is of the opinion that D8 discloses the following features of claim 1 (features not disclosed in D8 are struck-through by the board):

1.1 A method for the extraction of information about a staircase by a person, wherein the method is used for making a stair handrail or a stair lift comprising a guide which is installed at the staircase and along which a frame on which a person can be seated can move (see page 20, left column and text in Figure 7);

1.2 wherein markers are placed on or near the



staircase (see Figure 7: *"staircase is marked up"*);

- 1.3 wherein use is made of ~~a device comprising~~
- 1.4 a central processing unit which is loaded with a computer programme (see page 20, left column: *"computer programme models the staircase"*),
- 1.5 a digital memory which is connected to the central processing unit (such a memory is necessarily present in a computer),
- 1.6 a camera which is capable of recording a sequence of images (see page 20, left column: *"a number of overlapping digital photos"* and Figure 7: *"photographed in a sequence of overlapping images"*), and
- 1.7 output means which are connected to the central processing unit (such output means are necessarily present for making the results of the modelling available);
- 1.8 wherein the computer programme analyses the sequence of images ~~in real-time~~ using image analysis techniques (see page 20, left column: *"photogrammetry"* and *"computer programme models the staircase from the photos"* and Figure 7: *"staircase is modelled"*),
- 1.9 extracts information about said staircase comprising at least the spatial position of the markers (see page 20, left column: *"computer programme models the staircase from the photos"*; this necessarily includes the spatial position of the markers, as this is the purpose of placing markers).
- 1.10 communicates at least part of said information to the person ~~in real-time~~ via the output means (the modelled staircase necessarily has to be

displayed for further use in the process of making a stair handrail or a stair lift).

The proprietor's argument that D8 failed to disclose a feedback of extracted information to the person using the device is not convincing, as D8 clearly discloses to extract information about the staircase (see page 20, left column: "*computer programme models the staircase from the photos*") and necessarily communicates this information, e.g. via display on the computer screen, to a person using the computer, i.e. a person tasked with the extraction of information about a staircase (see feature 1.1).

The board is of the opinion that the proprietor's argument partly hinges on an interpretation of "the person" to which the information is communicated, which, however, is not reflected in the claim. The claim in particular does not define that the person receiving the extracted information is necessarily the person that carries out the other steps of the claimed method, i.e. the placing of the markers on or near the staircase and the recording of the sequence of images.

In conclusion, the board is of the opinion that the subject-matter of claim 1 differs from the disclosure of D8 only in that the camera, the processing unit with computer program, the digital memory and the output means are comprised in a device and in that the analysis of the sequence of images and the communication of at least part of the extracted information takes place in real-time.

1.3 Technical effect and problem to be solved

- 1.3.1 In the appealed decision, the opposition division did not mention a technical effect or a problem to be solved.
- 1.3.2 In view of the above identified differences, the board is of the opinion that the problem to be solved was to improve the method of D8 such that the extracted information about the staircase is provided without delay.
- 1.3.3 The proprietor argued that the differences had the effect of providing real time feedback of the spatial position of the markers. This allowed the person who placed the markers on the staircase to extract information at the location of the object and to determine instantaneously if the extracted information is sufficient for making a stair handrail or a stair lift.

Based on this technical effect, the problem to be solved by the invention was as described in paragraph [0004] of the patent, i.e. to provide a quick and reliable method for extraction information about a staircase by a person.

The proprietor further argued that the restriction of the problem to the provision of the extracted information "without delay" was based on hindsight as it included a pointer to the solution.

In the proprietor's view, the recognition of the need for real time feedback was part of the invention as D8 did not realize this insufficiency.

- 1.3.4 The board is not convinced by the proprietor's argument, because the above identified differentiating

features have no impact on the reliability of the extracted information per se. The integration of the components used into a single device and the real time communication have the technical effect of providing at least part of the extracted information quickly.

Furthermore, the formulation of the problem with the requirement of "without delay" does not contain a pointer to the solution. The problem is objectively based on the above identified differences (integration into a single device and analysis and communication of the information in real time) which provide the technical effect of a quick availability of the extracted information.

Finally, the fact that D8 does not recognize the need for a real time feedback is not relevant, as the objective technical problem is formulated based on the differences between the features of D8 as the starting point and those of the claimed invention, and the technical effect achieved by these differences.

The board therefore is of the opinion that the objective technical problem to be solved, starting from document D8 as closest prior art, is to improve the method of D8 such that the extracted information about the staircase is provided without delay.

#### 1.4 The skilled person

The board agrees with the proprietor's assessment that in the present case, the skilled person is to be considered a team of an expert in the field of building stair lifts and an expert in the field of augmented reality and image analyzing technology (see reply to appeal, page 3, fourth paragraph).

1.5 Combination of D8 with D1

1.5.1 The opposition division argued that the subject-matter of the independent claim 1 involved an inventive step when document D8 as closest prior art was combined with document D1. In particular, the method resulting from such a combination would still not comprise features 1.2, 1.9 and 1.10.

1.5.2 The proprietor argued that document D1 was not about staircases and did not recognize the need for real time feedback on the marker position. In addition, D8 related to a method for determining positions of a plurality of actively placed markers whereas D1 used a real-time SLAM algorithm for tracking the position of a robot. Therefore, the skilled person, starting from D8 and faced with the problem of providing quick and reliable feedback on the marker positions would not consult D1.

Furthermore, even if the skilled person were to combine D8 and D1, it would not arrive at the claimed solution. D1 (see abstract) was concerned with the localization of the position of a camera via Simultaneous Localization and Mapping (SLAM) but did not focus on the provision of a detailed map of the observed scene (see page 1052, column 2, second paragraph). A combination of D8 and D1 would therefore lead the skilled person to the use of a SLAM algorithm for localisation of a camera position.

If at all, D1 used a single calibration marker (see Figure 11a), which was however no hint to the claimed

real-time extraction and feedback of information on the position of a plurality of markers.

In conclusion, claim 1 involved an inventive step in view of D8 as closest prior art, as D1 did not solve the problem formulated in paragraph [0004] of the patent.

- 1.5.3 The board is not convinced by the arguments provided by the opposition division and the proprietor but agrees with opponent 2's line of argument for the following reasons:

The skilled person as defined above was aware of document D1, which stems from the field of augmented reality and image analyzing technology, and its relevance was evident already from the title.

D1 is titled "*Real-Time Single Camera SLAM*" and relates to "*real-time 3D localization and mapping [...] and live augmented reality with a hand-held camera*" (see abstract). The text emphasises that it focuses on real-time performance which is necessary, e.g. when a human needs visual feedback on his actions (see page 1052, right column, 3rd paragraph). Furthermore, D1 explicitly discloses under the heading "*Contributions of this paper*" (see page 1053, left column, 4th paragraph) that the method disclosed therein enables real-time MonoSLAM indoors in room-sized domains and tackles the goal of building a detailed, persistent map of all that a camera moving in an unknown scene has seen.

In view of these explicitly mentioned goals and advantages of D1, the skilled person received clear hints that the method disclosed in D1 was suited to

address the problem to be solved, and they would therefore have applied the teachings of document D1 to the method known from D8.

When applying the teachings of D1 to the method for the extraction of information about a staircase as disclosed in D8, the skilled person would have integrated the camera, the processing unit with computer program, the digital memory and the output means already known from D8 into a single device as shown in D1 (see page 1053, left column, 4th paragraph, "*A single low-cost camera attached to a portable computer*"). Furthermore, in view of the problem to be solved and D1's explicit aim of real-time processing (see *ibidem* and title), they would have modified the method known from D8 such that the analysis of the sequence of images and the communication of the extracted information were carried out in real-time.

Incidentally, providing a single device which enables real-time extraction of information automatically provides the advantages brought forward by the proprietor, i.e. that a person taking the pictures gets quick and reliable feedback with respect to the suitability of the extracted information for making a stair handrail or a stairlift.

In conclusion, the skilled person would have arrived at the subject-matter of claim 1 without an inventive step being involved.

2. Auxiliary request - Admission - Article 13(2) RPBA 2020

The auxiliary request was filed by the proprietor during the oral proceedings before the board.

2.1 The proprietor argued that amended claim 1 was a combination of granted claims 1 and 3 and that, therefore, the claimed subject-matter did not constitute a "shift of the case" and had been part of the opposition and appeal proceedings from the outset.

Furthermore, the amendments in claim 1 of the auxiliary request further defined the feature relating to the extraction of the information on the spatial position of the markers and the claimed subject-matter was thus clearly novel and inventive with respect to the available prior art.

Finally, the amendment was occasioned by the board's finding in the oral proceedings, that the subject-matter of claim 1 of the main request, which already contained a feature relating to the extraction of information was, contrary to the proprietor's arguments in this respect, not inventive in view of a combination of documents D8 and D1.

Therefore, the auxiliary request was to be taken into account

2.2 Opponent 2 argued that this auxiliary request could and should have been filed already during the first instance opposition proceedings or, at the latest, in reply to the board's preliminary opinion. Filing it only at this late stage of the proceedings, i.e. during the oral proceedings before the board, prevented the opponent from properly preparing for such a request.



Therefore, according to Article 13(2) RPBA 2020, the request should not be taken into account.

2.3 The board is not convinced by the proprietor's arguments and follows opponent 2's line of argument for the following reasons.

The auxiliary request was filed for the first time during the oral proceedings before the board, i.e. after notification of the summons to oral proceedings. Therefore, its admission is subject to the requirements set out in Article 13 (2) RPBA 2020 (Article 25(1) RPBA 2020).

In the board's view, the combination of claim 1 with dependent claim 3 constitutes a new case as novelty and inventive step of the subject-matter of such a claim was not discussed during the opposition proceedings. This combination is therefore to be regarded as an amendment in the sense of Article 13 (2) RPBA 2020.

In addition, the suitability of the amendments to resolve the issues which were raised with respect to the main request is not considered as an exceptional circumstance in the sense of Article 13 (2) RPBA 2020.

Finally, both opponents presented the objection of lack of inventive step in view of D8 and D1 in their statements of grounds of appeal and this view was shared by the board in its preliminary opinion. The fact that the board by the same token concluded during the oral proceedings that the subject-matter of claim 1 of the main request lacked an inventive step in view of the same documents can certainly not be seen as an exceptional circumstance.

Consequently, the board concludes that there are no exceptional circumstances within the meaning of Article 13(2) RPBA 2020 and does therefore not take into account the auxiliary request.

3. Reimbursement of appeal fee

Opponent 1 requested reimbursement of the appeal fee for two reasons.

Firstly, because the opposition division failed to substantiate why the arguments of opponent 1 in view of a combination of document D8 and the skilled person's common general knowledge could not be followed.

The board is not convinced by this argument for the following reasons: The opposition division did explain in its decision (see point 21.3) that "*[t]he integration of the camera, the processing means, and the output in a single device (e.g. a tablet) are not considered minor modifications of the offline system of D8*". The board is of the opinion that this statement, although short, is sufficient to substantiate the opposition division's decision with respect to the alleged lack of an inventive step in view of the combination of D8 with the skilled person's common general knowledge. The board notes that the opposition division is under no obligation to address each and every argument presented by the parties.

Secondly, opponent 1 requested reimbursement of the appeal fee because it had no opportunity to comment on the opposition division's reference to the definition of "real-time" taken from the Collins dictionary. Opponent 1 argued that this reference appeared for the

first time in the opposition division's decision and that it did not have a chance to comment on the reference to Collins dictionary during the oral proceedings. This violation of opponent 1's right to be heard constituted a substantial procedural violation.

The board is not convinced by this argument either. In order to interpret the term "real-time", the opposition division already referred to the Collins dictionary in its summons to oral proceedings (see Annex to the summons dated 25 October 2018, point 8.3). In its reply to these summons, opponent 1 reproduced the opposition division's argument (see opponent 1's letter dated 10 April 2019, point 17). Furthermore, during the oral proceedings before the opposition division, inventive step was discussed and opponent 1 explicitly stated that it had no further comments (see minutes of the oral proceedings before the opposition division, page 6, last line). The board is therefore of the opinion that opponent 1 was given the opportunity to present its arguments with respect to the reference to the Collins dictionary.

In conclusion, the board is of the opinion that no substantial procedural violation is present which would justify the reimbursement of the appeal fee to opponent 1.

## Order

### For these reasons it is decided that:

4. The request of opponent 1 for reimbursement of the appeal fee is refused.
5. The decision under appeal is set aside.
6. The patent is revoked.

The Registrar:

The Chair:



L. Gabor

R. Bekkering

Decision electronically authenticated