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**Datasheet for the decision  
of 31 October 2018**

**Case Number:** T 0905/14 - 3.2.06

**Application Number:** 06026096.5

**Publication Number:** 1762531

**IPC:** B66B13/26

**Language of the proceedings:** EN

**Title of invention:**

Safety system for elevator doors

**Patent Proprietor:**

MITSUBISHI DENKI KABUSHIKI KAISHA

**Opponent:**

Otis Elevator Company

**Headword:**

**Relevant legal provisions:**

EPC 1973 Art. 84  
EPC Art. 123(2)

**Keyword:**

Claims - clarity - main request (no)  
Amendments - added subject-matter - auxiliary request 1 (yes)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**  
**Boards of Appeal**  
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Case Number: T 0905/14 - 3.2.06

**D E C I S I O N**  
**of Technical Board of Appeal 3.2.06**  
**of 31 October 2018**

**Appellant:** Otis Elevator Company  
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**Decision under appeal:** **Interlocutory decision of the Opposition**  
**Division of the European Patent Office posted on**  
**5 February 2014 concerning maintenance of the**  
**European Patent No. 1762531 in amended form.**

**Composition of the Board:**

**Chairman** M. Harrison  
**Members:** M. Hannam  
W. Ungler

## Summary of Facts and Submissions

- I. An appeal was filed by the appellant (opponent) against the interlocutory decision of the opposition division in which it found that European patent No. 1 762 531 in an amended form met the requirements of the EPC. It requested that the interlocutory decision be set aside and the patent be revoked.
- II. The respondent (patent proprietor) requested that the appeal be dismissed or that the patent be maintained according to one of auxiliary requests 1 to 4.
- III. With letter of 23 May 2018 the appellant commented on auxiliary requests 1 to 4.
- IV. The Board issued a summons to oral proceedings and a subsequent communication containing its provisional opinion, in which it indicated *inter alia* that the clarity of claim 1 of the main request may require discussion at oral proceedings. It furthermore indicated that the subject-matter of claim 1 of auxiliary request 1 seemingly failed to meet the requirement of Article 123(2) EPC.
- V. Oral proceedings were held before the Board on 31 October 2018. The final requests of the parties were as follows:

The appellant (opponent) requested that the decision under appeal be set aside and that the European patent be revoked.

The respondent (patent proprietor) requested that the appeal be dismissed, auxiliarily that the patent be maintained in amended form on the basis of the first

auxiliary request, further auxiliarily that the patent be maintained in the following version:

Description: Pages 2 to 8 of the patent specification;

Claims: No. 1 to 13 of the second auxiliary request filed with letter dated 23 October 2014;

Drawings: Sheets 1/24 to 24/24 of the patent specification.

VI. Claim 1 of the main request reads as follows:

"A slide door system having a pair of horizontally opposed vertical frame portions (42), upper and lower vertically opposed horizontal frame portions (44, 46) connecting uppermost, lowermost ends of the vertical frame portions (42) respectively, the opposed vertical and horizontal frame portions (42, 44, 46) defining an opening therein, and a slide door (38) moving horizontally to open and close the opening, comprising: a first optical device (78) having a light emitter (88) for emitting light and a second optical device (80) having a light detector (90) for detecting the light emitted from the light emitter (88), characterized in that

one of the first and second optical devices (78) is mounted in a vertical surface of one of the opposed vertical frame portions (42) and the other of the first and second optical devices (80) is mounted in a horizontal surface of the upper horizontal frame portion (46) and adjacent to the one vertical frame portion (42), wherein the first and second optical devices (78, 80) are positioned in a vertical plane crossing the opening and adjacent to the opening, so that the light from the first optical device (78) travels toward second optical device (80) along a gap (72) defined between the slide door (38) and the one vertical frame portion (42)."

Claim 1 of auxiliary request 1 reads:

"A slide door system having a pair of horizontally opposed vertical frame portions (42), upper and lower vertically opposed horizontal frame portions (44, 46) connecting uppermost, lowermost ends of the vertical frame portions (42) respectively, the opposed vertical and horizontal frame portions (42, 44, 46) defining a doorway therein, and a slide door (38) moving horizontally to open and close the doorway, comprising: a first optical device (78) having a light emitter (88) for emitting light and a second optical device (80) having a light detector (90) for detecting the light emitted from the light emitter (88), characterized in that

one of the first and second optical devices (78) is mounted in an opening (160) defined in a vertical surface of one of the opposed vertical frame portions (42) and the other of the first and second optical devices (80) is mounted in an opening defined in a horizontal surface of the upper horizontal frame portion (46) and adjacent to the one vertical frame portion (42), wherein the first and second optical devices (78, 80) are positioned in a vertical plane crossing the doorway and adjacent to the doorway, so that the light from the first optical device (78) travels toward second optical device (80) along a gap (72) defined between the slide door (38) and the one vertical frame portion (42)."

Claim 1 of auxiliary request 2 reads as follows:

"A slide door system having a pair of horizontally opposed vertical frame portions (42), upper and lower vertically opposed horizontal frame portions (44, 46)

connecting uppermost, lowermost ends of the vertical frame portions (42) respectively, the opposed vertical and horizontal frame portions (42, 44, 46) defining an opening therein, and a slide door (38) moving horizontally to open and close the opening, comprising: a first optical device (78) having a light emitter (88) for emitting light and a second optical device (80) having a light detector (90) for detecting the light emitted from the light emitter (88), characterized in that

one of the first and second optical devices (78) is mounted in a vertical surface of one of the opposed vertical frame portions (42) and the other of the first and second optical devices (80) is mounted in a horizontal surface of the upper horizontal frame portion (46) and adjacent to the one vertical frame portion (42),

wherein the first and second optical devices (78, 80) are positioned in a vertical plane crossing the opening and adjacent to the opening, so that the light from the first optical device (78) travels toward second optical device (80) along a gap (72) defined between the slide door (38) and the one vertical frame portion (42) wherein the one optical device (78) is mounted substantially flush with the vertical frame portion (42) so that it does not protrude from the vertical surface of the vertical frame portion (42), and the other optical device (80) is mounted substantially flush with the horizontal surface of the horizontal frame portion (42) so that it does not protrude from the horizontal surface of the horizontal frame portion (46)."

VII. The appellant's arguments relevant to the present decision may be summarised as follows:

Claim 1 of the main request lacked clarity, contrary to Article 84 EPC. The spatial relationship between the detector and the surface was undefined which was problematic due the surface being two-dimensional while the detector was three-dimensional. How the detector could be mounted in a vertical surface while being anything but flush therewith was not clear.

As regards auxiliary request 1, this did not meet the requirement of Article 123(2) EPC. Lacking the feature that one of the optical devices was mounted flush in the vertical surface lacked basis in the application as filed, particularly in view of e.g. Figures 24, 25 and 28 which unambiguously showed a flush mounting arrangement.

VIII. The respondent's arguments relevant to the decision may be summarised as follows:

Regarding the main request, claim 1 was clear. With it not being possible to literally mount the optical device 'in' a surface, the only reasonable interpretation of their interrelationship was thus that the device was mounted in an opening of the surface and that it formed part of the vertical surface at that location. The expression 'mounted in a vertical surface' was simply broad and incorporated recessed, flush and protruding arrangements without being unclear. The claimed surface in which the optical device was mounted did itself not need to be flat, this itself possibly also exhibiting a recess in which the device was mounted.

As regards auxiliary request 1, the subject-matter of claim 1 met the requirement of Article 123(2) EPC. This found basis in the ninth, tenth and thirteenth



embodiments in combination with paragraphs [0007] and [0018] of the application as filed. The flush arrangement of the optical device with the surface of the frame was merely a preferred feature of the original disclosure, as evident from paragraph [0007] and dependent claim 2 as filed. The disclosure in paragraph [0018] was a further reason for the skilled person to understand the illustrated flush mounting of the ninth, tenth and thirteenth embodiments as being optional. The effect of flush mounting i.e. avoiding damage by contact with cargoes moving past the doorway, applied to the optical devices in both the vertical and the horizontal frame portions such that the flush vertical mounting of one of the devices was also optional.

## **Reasons for the Decision**

1. Main request

1.1 Clarity

Claim 1 is not clear contrary to the requirements of Article 84 EPC 1973.

1.1.1 Relative to claim 1 as originally filed, the present claim 1 has been amended to include the feature that one of the first and second optical devices is 'mounted in a vertical surface' of one of the opposed vertical frame portions. It is however unclear how an optical device can be 'mounted in a surface', since its structural relationship to the surface is unknown. While the respondent concurred that the optical device could not literally be mounted in a surface, it failed to provide an interpretation of mounting in a surface

which made the expression unambiguous, beyond indicating that it had to be mounted somewhere with respect to the frame member and its surface in a way that it allowed it to perform its function.

- 1.1.2 The respondent's argument that the relationship between the surface and the optical device when 'in the surface' was that the device occupied an opening in the surface so as to form the surface, does not resolve the lack of clarity of the expression. First, the expression in the claim simply does not define that the device 'forms' the surface, but merely that the device is mounted in it. In as far as 'occupying an opening' in the surface as such is concerned, the manner of 'occupying' is also not further defined in the claim, such that the manner of occupying the opening is left vague. If the structural implications of occupying an opening in a surface are then to be considered in relation to the terminology 'in a surface', the appellant argued that this simply allowed three generally stated positions of the optical device relative to the surface: an arrangement flush with the vertical surface, an arrangement recessed from the vertical surface or an arrangement protruding from the vertical surface. However, the Board finds that at least both the stated non-flush arrangements of the optical device relative to the surface are not logically identifiable with the requirement of being 'in the surface', such that these fail to reflect what the claimed expression of the device being 'mounted in a vertical surface' could reasonably mean. It is also noted that such mounting possibilities would anyway seem to be relevant more to an opening in the frame member rather than having any identifiable relationship with the surface. Thus, an understanding of the expression as implying simply the general structural

relationship of 'occupying an opening' is also not accepted.

- 1.1.3 The respondent's further argument that the expression 'mounted in a vertical surface' was simply broad and incorporated recessed, flush and protruding arrangements without being unclear is not accepted. Claim 1 as a whole simply does not allow the relationship between the optical device and the vertical surface to be ascertained in order for the expression 'mounted in a vertical surface' to be understood. Only in the case of the optical device being arranged to lie flush with the vertical surface would the argument of the respondent make sense, but such an arrangement is not defined in claim 1.
- 1.1.4 The respondent's further argument that the claimed surface in which the optical device was mounted did itself not need to be flat, also failed to clarify the expression at issue. Even if the claimed surface does not need to be planar, which can be accepted at least *arguendo*, the optical device still needs to be 'mounted' in that curved or recessed surface which, as explained above, would not be understood to have a clear meaning by the skilled person, this not being changed in any way by the surface itself not being flat.
- 1.1.5 In summary therefore the expression 'mounted in a vertical surface' is unclear such that claim 1 fails to meet the requirements of Article 84 EPC 1973. As a consequence the main request is not allowable.

2. Auxiliary request 1

2.1 Article 123(2) EPC

The subject-matter of claim 1 of auxiliary request 1 fails to meet the requirement of Article 123(2) EPC.

2.1.1 The features added to claim 1 relative to the main request, which define an opening in the vertical and horizontal surfaces in which the optical devices are mounted, have an alleged basis in the ninth, tenth and thirteenth embodiments of the application as filed. Not least from Figures 24, 25 and 28 which depict these embodiments but moreover from the application as filed as a whole, the skilled person would directly and unambiguously see the substantially flush mounting of the optical device with the vertical surface of the frame as inextricably linked with the mounting of the device in an opening in the vertical surface. Absent this feature in claim 1, its subject-matter cannot be derived directly and unambiguously.

2.1.2 The respondent's argument that the flush arrangement of the optical device with the surface of the frame was merely a preferred feature of the original disclosure does not justify its omission from the now claimed subject-matter. The respondent's allegation may perhaps be correct in the context of claim 1 as originally filed, with regard to which paragraph [0007], summarising the invention, specifically did not include the flush mounting and considering that dependent claim 2 disclosed it with respect to the vertical frame portion as a further, and thus in relation to claim 1 as filed, preferred, feature of the invention. However, the present claim 1 incorporates subject-matter from the ninth, tenth and thirteenth embodiments of the

invention, which themselves specifically describe the claimed openings in the sole context of the optical devices being mounted flush with the horizontal and vertical surfaces of the frame portions. If the subject-matter of claim 1 should find further basis in paragraph [0018] as filed, this also discloses the light emitter to be substantially flush with the vertical surface of the frame such that this substantially flush nature of the optical devices is indeed inextricably linked with the present subject-matter of claim 1.

2.1.3 As regards the respondent's argument that the disclosure of paragraph [0018] was the reason for the skilled person to understand the illustrated flush mounting of e.g. the ninth, tenth and thirteenth embodiments as being optional, this is not accepted. It is noted that paragraph [0018] does not disclose the substantially flush nature of the light emitter with the vertical surface of the frame as an optional feature; this optional flush nature is disclosed solely with respect to the light receiver located in the upper horizontal surface. There is thus no direct and unambiguous basis for the skilled person considering paragraph [0018] for at least the light emitter, located in the vertical frame portion, to not be arranged flush with the vertical surface of the frame.

2.1.4 The respondent's argument that the effect of flush mounting i.e. avoiding damage by contact with cargoes moving past the doorway, was relevant to the optical detectors in both the vertical and the horizontal frame portions does not imply that the flush mounting in the vertical surface is therefore to be seen as an optional feature. Paragraph [0018], which is part of the disclosure for the first embodiment of the invention,

discloses the light emitter flush in the vertical surface without any suggestion of it being optional. The disclosure of the related light receiver flush in the horizontal surface as being merely preferable does not change the unambiguous disclosure of the light emitter as being flush in the vertical surface. Even reading paragraph [0018] in the light of paragraph [0007], noting that there is no explicit reference of one paragraph to the other, would change nothing in this regard since, as identified in 2.1.2 above, paragraph [0007] relates to a summary of the invention as originally filed, not to how it is now being claimed.

2.1.5 It thus follows that the subject-matter of claim 1 of auxiliary request 1 cannot be derived directly and unambiguously from the application as filed, contrary to the requirement of Article 123(2) EPC. Auxiliary request 1 is thus not allowable.

3. Auxiliary request 2

3.1 The appellant raised no objections to auxiliary request 2. The Board also sees no objections in this regard and finds the request to meet the requirements of the EPC. In particular, it may be noted that while the expression 'mounted in a surface' is *per se* still present in claim 1 (as it was also in claim 1 found allowable by the opposition division), claim 1 now contains the additional information that the optical device 78 'is mounted substantially flush with the vertical frame portion so that it does not protrude from the vertical surface of the vertical frame portion'. Due to the presence of this latter feature, seen in combination with the feature 'mounted in a surface', the skilled person is presented with a clear

structural relationship of the optical device to the surface (albeit split between different parts of the claim), namely that the mounting of the optical device is such that it must be substantially flush with the vertical surface of the frame portion.

## 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 with the order to maintain the patent as amended in the following version:  
Description: Pages 2 to 8 of the patent specification  
Claims: No. 1 to 13 of the second auxiliary request filed with letter dated 23 October 2014  
Drawings: Sheets 1/24 to 24/24 of the patent specification

The Registrar:

The Chairman:



M. H. A. Patin

M. Harrison

Decision electronically authenticated