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D E C I S I O N
of 7 October 2003

Case Number: T 0013/02 - 3.2.1

Application Number: 96109413.3

Publication Number: 0749931

IPC: B66B 11/08

Language of the proceedings: EN

Title of invention:
Traction sheave elevator

Patentee:
Kone Corporation

Opponent:
Schmitt & Sohn GmbH & Co. Aufzugswerke

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (yes)"

Decisions cited:
-

Catchword:
-



Case Number: T 0013/02 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 7 October 2003

Appellant: Schmitt & Sohn GmbH & Co.
(Opponent) Aufzugswerke
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D-90402 Nürnberg (DE)

Representative: LOUIS- PÖHLAU- LOHRENTZ
Merianstrasse 26
D-90409 Nürnberg (DE)

Respondent: Kone Corporation
(Proprietor of the patent) Munkkiniemen Puistotie 25
FI-00330 Helsinki (FI)

Representative: Zipse + Habersack
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 13 December 2001
rejecting the opposition filed against European
patent No. 0749931 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: S. Crane
Members: M. Ceyte
H. Preglau

Summary of Facts and Submissions

- I. The respondent is proprietor of European patent No. 0 749 931 (application No. 96 109 413.3).
- II. The patent was opposed by the appellant on the grounds of lack of inventive step.

The following state of the art was *inter alia* cited:

E1: EP-A-0 631 968

E4: EP-A-0 375 208.

- III. By its decision posted 13 December 2001 the opposition division rejected the opposition.
- IV. On 21 December 2001 the appellant (opponent) lodged an appeal against that decision and paid the prescribed appeal fee.

In the statement of grounds of appeal filed on 19 April 2002 the following state of the art was additionally cited:

E5: DE-C-3 922 798.

- V. Oral proceedings before the Board were held on 7 October 2003.

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

The respondent (patent proprietor) requested that the appeal be dismissed and the patent be maintained as granted.

Claim 1 as granted reads as follows:

"1. Traction sheave elevator in which the drive machinery (6,106) with the traction sheave (7,107) is placed in an elevator shaft (15) provided with guide rails for the elevator car (1,101) and counterweight (2,102), in which traction sheave elevator the hoisting ropes (3,103) go upward from the traction sheave (7,107), **characterized** in that the elevator comprises two diverting pulleys (4,5,104,105) mounted on one of the guide rails, in the upper part of the guide rail (10), the first one of said diverting pulleys carrying a hoisting rope portion going from the traction sheave to the elevator car while the second one carries a hoisting rope portion going from the traction sheave to the counterweight."

VI. In support of its request the appellant made essentially the following submissions:

E1 discloses all the features of claim 1 except the disposition of the two diverting pulleys "on one of the guide rails".

Claim 1 states in its pre-characterising portion that "guide rails" are provided for the elevator car and the counterweight. Obviously the wording "guide rails" must be construed as meaning "pairs of guide rails", since the elevator car and the counterweight are each equipped with two guide rails. The skilled person would

therefore interpret claim 1 as requiring that the two diverting pulleys are mounted either on the guide rails of the elevator car or on the guide rails of the counterweight.

This interpretation is also consistent with the description of the European patent in suit which does not exclusively relate to one guide rail but also to guide rails. Reference is made in this respect to the passage of column 1, line 66 to column 2, line 1, which says the following:

"An advantageous overall solution allowing the weight of the elevator car and counterweight to be completely or at least partially supported by the guide rails"
(emphasis added)

The above quoted phrase thus confirms that the support of the diverting pulleys and the force transfer are not ensured by only one guide rail.

E5 teaches that both of the diverting pulleys need to be provided on the guide rails of the elevator car. It is immaterial that both of the diverting pulleys disclosed therein are mounted on a beam supported by the guide rails, since claim 1 as drafted does not require the diverting pulleys to be directly supported by the guide rails.

Therefore the subject-matter of claim 1 is rendered obvious by the combination of E1 and E5.

Given the arrangement of the two diverting pulleys on the guide rails of the elevator car was obvious, their disposition on only one of these two guide rails is merely a matter of choice requiring no exercise of inventive skill. Consequently even if claim 1 were to be construed as requiring that both of the diverting pulleys are mounted on one guide rail, its subject-matter would not be inventive either.

VII. The respondent (patentee) rejected the arguments brought forward by the appellant. It submitted the reasons for which the subject-matter of claim 1 was inventive over the combination of prior art documents E1 and E5.

Reasons for the Decision

1. The appeal is admissible.
2. It is not in dispute that prior art document E1 acknowledged and evaluated in the introductory part of the European patent represents the closest art.

The parties also accepted that this citation discloses all the features of claim 1 except the arrangement of the two diverting pulleys "on one of the guide rails". Claim 1 states in its pre-characterising part that the elevator car and the counterweight are both provided with guide rails.

The appellant alleged that the wording "guide rails" in claim 1 is to be construed as meaning "pairs of guide rails" because obviously the elevator car and the

counterweight are both equipped with two guide rails. Thus the skilled person would interpret claim 1 as requiring that the two diverting pulleys are mounted either on the guide rails of the elevator car or on the guide rails of the counterweight.

The Board is unable to accept such reasoning:

The phrase in claim 1 "two diverting pulleys (4,5,104,105) mounted on one of the guide rails" is clearly unambiguous. The Board therefore relies upon the plain natural sense of the term "two diverting pulleys mounted on one of the guide rails" which means what it says, that is the disposition of the two diverting pulleys on one of the guide rails.

Claim 1 requires in its precharacterising part that "guide rails [are provided] for the elevator car (1,101) and the counterweight (2,102)". In its characterising part it is specified that the two diverting pulleys are arranged on "one of the guide rails". Such wording gives no cause to understand "two diverting pulleys mounted either on the guide rails of the elevator car or on the guide rails of the counterweight." If the author of the European patent had wished to claim such disposition, he would have done so.

No other interpretation of this feature is possible in the context of the European patent. Reference is made in this respect to the two embodiments or variants described in the European patent: In the first one, illustrated by Figures 1 and 2, the two diverting pulleys (4, 5) are superimposed and attached on the

upper part of one guide rail; in the second one, illustrated by Figures 3 and 4, the diverting pulleys (104, 105) are positioned on the same level, the first one being juxtaposed with the second one so as to have the same axis of rotation (see Figure 3). The juxtaposed diverting pulleys (104, 105) are also attached on the upper part of the guide rail (110).

The appellant further relies upon the following passage (column 1, line 66 to column 2, line 1):

"An advantageous overall solution allowing the weight of the elevator car and counterweight to be completed or at least partially supported by the guide rails".

Such advantage is explained in the paragraph bridging columns 3 and 4 of the European patent. It is said that, when both the diverting pulleys and the rope anchorages are supported by the guide rails, it is not necessary to provide any other support to carry the weight of the counterweight and elevator car, so that no special requirements relating to supporting the weight of the elevator car and counterweight need to be imposed on the construction of the shaft. It is observed that this advantage may be achieved by the two embodiments described in the European patent, where the diverting pulleys are both mounted on one of the guide rails. The above quoted passage thus does not imply that the two diverting pulleys are mounted on the guide railsg of the elevator car.

From the above it follows that the traction sheave elevator according to claim 1 differs from that disclosed in E1 by virtue of the disposition of the two diverting pulleys "on one of the guide rails".

3. The claimed invention is to be seen as a further development of the "machineroom-less" elevator concept taught by document E1, ie, an elevator having its drive machinery and traction sheave placed in the elevator shaft. The essential aim is to optimise the saving in building space which can be achieved in this concept and this aim is achieved by the claimed disposition of the two diverting pulleys on one of the guide rails.

This enables the arrangement depicted in Figures 1 and 3, whereby the plane between the guide rails of the elevator car may pass through the centre of gravity of the elevator car and the two diverting pulleys mounted on one of the guide rails of the elevator car, the machinery and the counterweight are placed on the same side between the elevator car and the shaft wall, the space required by the two diverting pulleys being not larger than the space needed for the counterweight or the machinery. This is in contrast to the arrangement of document E1 where the diverting pulleys are arranged vertically above the ends of the guide rails and the extent of travel of the elevator car.

In the other opposed prior art documents, there is no suggestion or disclosure of the claimed arrangement of the diverting pulleys:

In E5 the diverting pulleys are not mounted on one of the guide rails but on a horizontal beam which is supported by two guide rails.

In E4 the diverting pulleys are mounted on a beam which is supported in openings provided in the shaft wall.

Also, contrary to the appellant's submissions, the claimed arrangement was not an obvious one to adopt from simple engineering principles, since it is usual in elevators to strive for a balanced arrangement rather than concentrating the load on only one of the two guide rails of the elevator car.

Therefore in the Board's judgment, the subject-matter of claim 1 as granted cannot be derived in an obvious manner from the available prior art and consequently involves an inventive step (Article 56 EPC).

4. Dependent claims 2 to 6 relate to particular embodiments of the invention claimed in claim 1 and are likewise allowable.

The opposition grounds thus do not prejudice the maintenance of the patent as granted.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

A. Counillon

S. Crane