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D E C I S I O N
of 22 June 2004

Case Number: T 0260/03 - 3.2.1

Application Number: 95106694.3

Publication Number: 0680920

IPC: B66B 11/00

Language of the proceedings: EN

Title of invention:

Traction sheave elevator, hoisting unit and machine space

Patentee:

Kone Corporation

Opponent:

Schmitt & Sohn GmbH & Co. Aufzugswerke
Alpha Getriebebau GmbH

Headword:

-

Relevant legal provisions:

EPC Art. 123(2), 83, 56

Keyword:

"Added subject-matter (no)"
"Sufficiency of disclosure (yes)"
"Inventive step (yes)"

Decisions cited:

T 0014/83, T 0611/89, T 0267/91

Catchword:

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Case Number: T 0260/03 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 22 June 2004

Appellant: Schmitt & Sohn GmbH & Co.
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Respondent: Kone Corporation
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted 15 January 2003
rejecting the opposition filed against European
patent No. 0680920 pursuant to Article 102(2)
EPC.**

Composition of the Board:

Chairman: S. Crane
Members: Y. A. F. Lemblé
G. E. Weiss

Summary of Facts and Submissions

- I. The appeal is directed against the decision of the Opposition Division posted 15 January 2003 to reject the opposition against European patent No. 0 680 920. The patent had been opposed on the grounds that the patent did not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 100(b) EPC) and that its subject-matter lacked an inventive step (Article 100(a) EPC).
- II. On 20 February 2003 the appellant (opponent 01) lodged an appeal against that decision and paid the required appeal fee. Both opposition grounds were maintained on appeal. In the statement of grounds filed on 14 May 2003 the appellant submitted that the subject-matter of the patent did not involve an inventive step having regard to the following documents:
- D1: DE-A-38 02 386
- D2: US-A-5 018 603
- III. In the oral proceedings held on 22 June 2004 the appellant requested that the decision to reject the opposition be set aside and the patent be revoked. The party as of right (opponent 02) had not appeared, despite having been duly summoned. The respondent (patent proprietor) requested that the patent be maintained on the basis of a new claim 1 submitted at the oral proceedings (main request) or in the alternative on the basis of the respective claim 1

according to one of the auxiliary requests I to V filed with letter dated 12 May 2004.

IV. Independent claims 1 and 7 read as follows:

"1. Traction sheave elevator comprising an elevator car (1,101) moving along elevator guide rails (10), a counterweight(2) moving along counterweight guide rails (11), a set of hoisting ropes (3,103) on which the elevator car and counterweight are suspended in the elevator shaft (17,117), and a drive machine unit (6) driving a traction sheave (7) placed in the elevator shaft and acting on the hoisting ropes (3,103), characterized in that the drive machine unit (6) is -in relation to its diameter- flat in the direction of the drive shaft of the traction sheave, and that a wall of the elevator shaft (17,117) contains a machine space (15,115) in which the essential parts of the drive machine unit (6) are placed, so that no separate machine room is present."

"7. Hoisting unit for a traction sheave elevator, which is in an opening of an elevator shaft wall, essentially within the thickness of the shaft wall, wherein the hoisting unit (9) comprises a discoidal drive machine unit (6) and an instrument panel (8) attached to a frame (20) of the hoisting unit (9), whereby in the thickness direction of the wall the hoisting unit (9) has a thickness not exceeding that of said wall of the elevator shaft (17,117) and that substantially only the traction sheave (7) or its drive shaft protrudes from the hoisting unit (9) into the shaft."

V. The appellant's submissions made in writing and at the oral proceedings can be summarised as follows:

The addition at the end of claim 1 of the feature referring to the absence of any separate machine room was made in the course of the oral proceedings and must be considered as late-filed. This amendment was therefore not admissible. Moreover, there was no basis in the originally filed documents for that additional feature, since Figure 2 of the application as filed clearly depicted a room on the right-hand side of the elevator's wall which contained the machinery 6. Since the machinery 6 was accessible through this room, it had to be considered as a machine room, contrary to what was now claimed.

The patent did not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a skilled person. The features of the characterizing portion of claim 1 were indefinite and, when taken in their broadest meaning, were so unclear that a skilled person was unable to put them into practice. Defining the drive machine unit in terms of its thickness by the indefinite expression "flat in the direction of the drive shaft" and in terms of its possible containment within the wall of the elevator shaft, an element which did not belong to the elevator machinery, was a mere list of desiderata but no indication as to how the drive machine unit should be built in order to fulfil the claimed requirements. Even if the description was used to interpret these features, it did not contain a concrete indication as to how the drive machine unit should be constructed. If the elevator's walls were very thin, for example glass

walls, it was obviously not possible to carry out the invention. The wording used did also not rule out the possibility of the drive machine unit protruding beyond the wall into the elevator shaft. All this led to the conclusion that the claims did not provide a clear technical teaching and that the public was left into legal uncertainty as to the real scope of protection afforded by the claims.

The subject-matter of claim 1 did not involve an inventive step having regard to document D1 and the general knowledge of the person skilled in the art. Starting from the arrangement of Figure 2 of D1 which showed a motor 18 mounted in an opening of the wall of the elevator shaft and having no support in the machine room itself, the problem of reducing the axial dimension of this drive motor could not in itself be seen as in any way going beyond the normal considerations of the skilled person. Flat electrical drives were well known and on the market before the priority date of the patent. The obvious replacement of the drive motor 18 by such a flat drive would lead to a drive machinery which would no longer protrude from the elevator's wall into the machine room, so that no machine room would remain. The skilled person was therefore directly pointed to the subject-matter of claim 1 and claim 7.

The subject-matter of claim 1 was also rendered obvious by a combined consideration of the documents D1 and D2. Starting from the traction sheave elevator of D1 as the nearest prior art, it would have been obvious to replace the electrical motor 18 by the axially shorter driving machinery of D2. As a result of this

substitution, the essential elements of the drive machinery would be confined within the limits of the wall, so that the skilled person would recognise that he could then dispense with the machine room and thus be led to the subject-matter of claim 1 and claim 7 in an obvious manner.

VI. The submissions of the respondent may be summarized as follows:

There was an explicit basis for the addition in claim 1 of the feature referring to the absence of a machine room in column 1, lines 52 to 53 of the patent.

The mutual relationship of the essential features of the claims was explained in the patent specification in such a way that a skilled person had no difficulty in carrying out the invention. The general idea, which was readily understood by a skilled person, was to provide a machine unit which was flat enough so as to be placed within the wall thickness of the elevator shaft. This inventive concept was especially applicable for Europe where the wall thickness of buildings was typically within the range of 10 to 20 centimetres.

The arguments of the appellant as regards inventive step were not convincing. It was not unusual in the field of elevators to propose solutions for saving place in machine rooms and D2 was simply one example out of many. The elevator hoist apparatus of D2 was of the outer rotor type, i.e. with the driving sheave surrounding the electrical motive components. This construction was not suitable for replacing the motor of D1. In the prior art documents cited by the

appellant there was no hint for dispensing with the conventional machine room, even less for replacing it with a machine space contained within the wall of the elevator shaft.

Reasons for the Decision

1. The appeal meets the requirements of Articles 106 to 108 and Rule 64 EPC and is therefore admissible.
2. *Admissibility of the amendments*

It is established case law that the Boards of Appeal have discretion to admit amended claims at any stage of the appeal proceedings, including oral proceedings, provided that these amendments are occasioned by grounds for opposition in reaction to the objections and arguments put forward by the opponent (Case Law of the Boards of Appeal of the EPO, 4th edition 2001, Appeal procedure, paragraph 14.1).

The addition of the expression "so that no separate machine room is present" at the end of claim 1 implicitly clarifies that the machine space contained in the wall of the elevator shaft takes the place of the conventional machine room which usually receives the elevator driving machinery with its control and checking devices.

There is an explicit basis for that added feature in the passage bridging column 1, lines 45 to column 2, lines 3 of the application as published, more specifically in column 1, lines 49 to 50.

The contention of the appellant that the area depicted on the right-hand side of the elevator's wall in Figures 2 and 4 of the patent specification had to be considered as a machine room, is not consistent with the content of the original disclosure which, in addition to the passage already cited above, further mentions that the machine space 15 is accessible from the outside through a door 116 (column 3, lines 2 to 5 and column 4, lines 10 to 12 of the application as published), which door closes off the machine space from the area in question.

3. *Sufficiency of disclosure*

It has been consistent case law of the Boards of Appeal since T 14/83 (OJ EPO 1984, 105) that sufficiency of disclosure within the meaning of Article 83 EPC must be assessed on the basis of the patent as a whole - including the description and the drawings- and not of an individual claim alone.

In the present case, the Board is satisfied that the patent as a whole provides a skilled reader with sufficient information as to how the invention as claimed can be carried out. Document WO-A-95/00432, which is referred to in column 2, line 43 of the patent, is an example of a drive machine unit which is flat in the direction of the drive shaft of the traction sheave (see in particular page 3, lines 23 to 31 of this document) and which enables the skilled person to put the features of claim 1 into practice. In accordance with T 267/91 and T 611/89, an invention is also sufficiently disclosed when reference is made to another document in the patent specification and the skilled person can obtain from this cross-reference the

information which is required to carry out the invention and is not necessarily disclosed in the description itself. WO-A-95/00432 was available at the date of filing of the present patent.

Claim 1 defines the relationship between elements of the elevator and the building (shaft, wall) in which these elements are arranged. The claim relates to the elevator as a final product, i.e. after it has been installed in the building. Since manufacturers of elevator do not usually build the walls of the elevator shaft of the building -those are normally designed by an architect and calculated by a civil engineering team-, implementing the teaching of the claim involves both the elevator manufacturer and the civil engineering team. These skilled persons would have no difficulty in understanding and implementing the teaching of claim 1, which is to arrange the machine space within a wall of the elevator shaft and to receive in that machine space a drive machinery having the necessary flatness and the power to drive a traction sheave placed in the elevator shaft.

Claim 1 need not be applicable for all buildings. There may be buildings, for example those having very thin glass or paper walls, for which the claimed subject-matter is not realisable. These simply do not fall under the scope of the claim. This does not mean, however, that the teaching of the claim cannot be carried out.

Considering that lack of clarity is not an opposition ground, it would appear that the appellant is trying to cloak clarity objections under insufficiency of

disclosure. In the Board's judgment, claim 1 satisfies the requirements of Article 84 EPC in respect of clarity as well as those of Article 83 EPC in respect of sufficiency of disclosure. However, for the purpose of judging inventive step, the following comments can be made in respect of the features for which clarity has been objected to:

The feature that the drive machine unit should be "-in relation to its diameter- flat in the direction of the drive shaft of the traction sheave" is readily understandable. Referring to the axis of the drive shaft of the sheave, this expression simply means that the diametrical or radial extend of the drive machine unit is significantly greater than its axial dimension.

What a skilled reader understands under "a machine space" should be clear. This term is defined in claim 1 itself by the space receiving the essential parts of the drive machine unit. The machine space takes the place of the conventional "machine room" (see column 1, line 9 of the patent), the latter being a concept which is well known in the art, especially in the field of elevators. It can be considered that the machine space contains the driving machinery including its control and checking devices as required by the national or international regulations concerning powered elevator constructions (see e.g. DIN EN 81, Teil 1, "Begriffbestimmungen": page 3 "Triebwerkraum" and page 14, point 6.1.2).

The expression "a wall of the elevator shaft contains [a machine space]" is also clear and simply means what it says, namely that the "machine space" is located

within the confines of a wall of the elevator shaft construction. The content of the patent and the described embodiments are fully consistent with that wording. Column 2, lines 56 to 58 of the description reads: "The main parts of the elevator machinery are mounted in a space limited in its maximum by the thickness of the wall of the elevator". Later on, column 3, lines 18 to 20 confirms: "In any case, the machine space has a depth not exceeding the thickness of the wall of the elevator shaft".

4. *Inventive step*

- 4.1 The nearest prior art is to be found in document D1 which discloses (see Figure 1) an elevator comprising an elevator car 10, a counterweight 30, a set of hoisting ropes 8 on which the elevator car and counterweight are suspended in the elevator shaft 12 and a drive machine unit 18 driving a traction sheave 20 placed in the elevator shaft 12 and acting on the hoisting ropes.

The problem solved by D1 is to reduce the size of the shaft and to propose an alternative to the conventional location of the machine room above the shaft (column 2, lines 1 to 4). Accordingly, D1 proposes that the drive machine unit with its electric motor 18 be located in a machine room 42 situated on the highest floor 16 on the side of the elevator shaft. D1 merely specifies that the motor 18 is arranged in the machine room 42 above the bottom-level of the last floor 16 (column 2, line 67 to column 3, line 2).

4.2 D2 discloses an elevator having a drive machine unit with its electric motor 2 and driving sheave 3. The driving sheave is not placed in the elevator shaft as required by the preamble of claim 1 but installed in a machine room 11 which is located above the elevator shaft (see Figure 1 and column 1, lines 7 to 17). To reduce the axial dimension of the hoist apparatus is indeed one of the problems solved by D2. Through the integration of the rotor and stator of the electric motor into the driving sheave a saving of place in the machine room and a reduction of the wear on the sheave is achieved (column 2, lines 44 to 54).

4.3 The Board cannot agree with the contention of the appellant that the subject-matter of claim 1 lacked inventive step. Starting from the elevator of D1, even if the person skilled in the art would recognise in the light of the document D2 or on the basis of his knowledge of the existence of axially shorter electrical motors, that he could achieve further space saving in the machine room by employing a flatter drive machine, there is nothing in these prior art documents that could lead him to do away with the machine room completely and replace it by the claimed machine space contained in a wall of the elevator shaft. None of the cited documents D1 or D2 questions the existence of the machine room. In order to come to the subject-matter of claim 1 the skilled person, in abandoning the concept of a classical machine room, had to recognise that the power machinery with its essentials (control and checking devices which are normally arranged within such a conventional machine room for maintenance or checking purposes) could simply be placed in a recess made in the wall of the elevator

shaft. This step is not hinted at by any of the prior art documents and goes beyond the field of normal practice of a person skilled in the art.

The subject-matter of claim 1 cannot therefore be derived in an obvious manner from the state of the art.

- 4.4 Independent claim 7 refers to the a hoisting unit comprising a discoidal drive machine unit and an instrument panel attached to a frame of the hoisting unit. The hoisting unit has a thickness which does not exceed that of the wall of the elevator shaft for which the hoisting unit serves as a drive machinery. There is nothing in the prior art which could lead to such hoisting unit.
- 4.5 The Board concludes that the subject-matter of independent claims 1 and 7 involve an inventive step (Article 56 EPC).
5. Dependent claims 2 to 6 relate to further developments of the inventive concept disclosed in claim 1 and contain all of the features of claim 1. The above conclusions regarding inventive step apply equally to these claims which likewise meet the requirements of the EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to maintain the patent on the basis of the following documents:
 - claim 1 submitted at the oral proceedings;
 - claims 2 to 7, description and drawings as granted.

The Registrar:

The Chairman:

A. Vottner

S. Crane