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**Datasheet for the decision
of 15 January 2016**

Case Number: T 2057/11 - 3.2.04

Application Number: 02792704.5

Publication Number: 1460914

IPC: A47B9/20

Language of the proceedings: EN

Title of invention:

AN ADJUSTABLE CONSTRUCTION PREFERABLY AN ARTICLE OF FURNITURE
AND A SQUEEZE PROTECTION AND A DRIVE UNIT THERETO

Patent Proprietor:

LINAK A/S

Opponent:

Logicdata Electronic&Software Entwicklungs GmbH

Headword:

Relevant legal provisions:

EPC Art. 54, 111(1)

Keyword:

Novelty - main request (yes)
Remittal to the department of first instance - (yes)

Decisions cited:

Catchword:



**Beschwerdekammern
Boards of Appeal
Chambres de recours**

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Case Number: T 2057/11 - 3.2.04

**D E C I S I O N
of Technical Board of Appeal 3.2.04
of 15 January 2016**

Appellant:
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Decision under appeal:

**Interlocutory decision of the Opposition
Division of the European Patent Office posted on
11 July 2011 concerning maintenance of the
European Patent No. 1460914 in amended form.**

Composition of the Board:

Chairman A. de Vries
Members: J. Wright
T. Bokor

Summary of Facts and Submissions

- I. The appellant-proprietor lodged an appeal, received 12 September 2011, against the interlocutory decision of the opposition division posted on 11 July 2011 on the amended form in which European patent no. 1460914 can be maintained and paid the appeal fee on the same day. Their statement setting out the grounds of appeal was filed on 21 November 2011.

The opponent also lodged an appeal on 9 September 2011 against the above interlocutory decision paying the appeal fees the same day. However they withdrew their appeal with letter of 8 November 2011. Therefore the appellant is the sole appellant and the opponent is respondent.

- II. Opposition was filed against the patent as a whole and based inter alia on Article 100(a) together with Article 52(1) and 54 EPC for lack of novelty of claim 1 vis-à-vis E2, E3 and E5. The division held that the subject matter of claim 1 of the patent as granted lacked novelty. The division held that the patent as amended according to an auxiliary request met all the requirements of the EPC. In its decision it considered, amongst others, the following documents:

E2: US 5282711 A

E3: SE 516479 C and its English translation

E4: Hans-Rolf Tränkler "Sensortechnik, Handbuch für Praxis und Wissenschaft", Berlin, Springer Verlag, 1998, pages 386 to 399 and pages 422 to 428

E5: AT 410626 B

III. Oral proceedings before the Board were duly held on 15 January 2016.

IV. The appellant requests that the decision under appeal be set aside and that the patent be maintained as granted.

The respondent requests that the appeal be dismissed.

V. The wording of independent claim 1 according to the main request (granted patent) is as follows:

"An article of furniture, comprising:

a stationary part (1,3),
an adjustable element (5) connected therewith, a drive unit (8) for causing the adjustment of the element (5), said drive unit (8) with a movable activation element (14; 38) and another part (13; 41) being secured to the adjustable element and to the stationary part, respectively, said drive unit comprising an electric motor (10) for the driving thereof,

a control unit (6) for controlling the drive unit, a sensor (15) connected to the control to currently record deviations in the load on the adjustable element in operation and, in response to this, to signal the control unit to stop/reverse the motor,

characterized in that

the sensor is formed by a piezo element (20) arranged in connection with one of the attachment points of the drive unit (8) or in the drive unit itself to record deviations in the force extending between the attachment points of the drive unit."

VI. The appellant argued as follows:

The subject matter of granted claim 1 is novel with respect to E2, E3 and E5.

Regarding E2, the document does not disclose a piece of furniture as claimed. When clamped to a piece of furniture the feeding device disclosed does not become part of the furniture

With respect to E3 the term piezo element is nowhere disclosed. Nor is it implicit from the words load cell or strain gauge. The most common type of strain gauge is the foil strain gauge which has a meandering metal conductor which detects strain due to changes in geometry of the conductor when stretched or compressed. It has no piezo element. Furthermore it could be adhered to the table shown in the figures of E3 at the position of the line 4 and would be able to detect strain. Therefore E3 does not disclose, even implicitly, a piezo element.

The same goes for E5, different kinds of pressure sensors such as inductive or capacitive pressure sensors are also known. Therefore it is not implicit in E5 that the pressure sensor mentioned includes a piezo element.

Regarding further proceedings, in order to deal with inventive step of claim 1, it would require adjournment of the proceedings since new as yet unknown arguments would be brought. Having found the subject matter of claim 1 to be novel, the case should be remitted to the opposition division.

VII. The respondent argued as follows:

The subject matter of granted claim 1 lacks novelty. With respect to any of E2, E3 or E5.

With respect to E2, the assisted feeding device disclosed can be clamped to a piece of furniture. When so attached it becomes part of the furniture. In any case E2 leaves open whether it can be incorporated into a piece of furniture without using a clamp, in which case it would be part of the piece of furniture.

Regarding E3, load cells and strain gauges commonly comprise piezo elements, therefore this feature is implicitly part of the table disclosed in E3. Whilst metal foil strain gauges may be known on bridges, they are not known in the field of furniture. In any case metals also demonstrate piezo-resistive effects. Therefore the metal conductors of a foil strain gauge are piezo elements. In the figures, the load cell 4 points to a line on a U shaped element. This must be a piezo element between the two arms of the U.

Regarding E5, a pressure sensor includes a piezo element, the skilled person understands this when they read pressure sensor. Therefore the feature is implicit.

As regards further proceedings, since the Board has dealt with the issue of novelty of claim 1 they should not remit the case but also deal with the issue of inventive step of claim 1, for the sake of procedural efficiency.

Reasons for the Decision

1. The appeal is admissible.
2. Background of the invention

The patent concerns, *inter alia*, pieces of furniture that can be adjusted with a motor, such as height adjustable tables (see patent specification, paragraphs [0002] and [0003]). Objects, such as fingers, that might get jammed as the piece of furniture is adjusted need to be protected from damage or injury (patent specification, paragraph [0004]). To prevent such injury, claim 1 as granted defines a piece of furniture with a sensor, formed by a piezo element which records deviations in the force between the attachment points of the drive unit that can signal a control unit to stop/reverse the motor.

3. Main request: novelty of claim 1

The appellant has challenged the opposition division's finding that claim 1 as granted lacked novelty (see decision, reasons section 2).

- 3.1 Novelty with respect to E2

E2 discloses (see abstract, figures 1-3, 12 a and 12b, and column 4, line 45 to column 9 line 5) a device for assisted feeding of persons. The main components can be seen in figure 1. The device includes an adjustable element in the form of a spoon 60 adjusted by a drive unit 50 (column 5, lines 34-49). The drive unit 50 has a movable activation element, namely the linear and rotary rod 70, driven by electric motors 82 and 102 (figures 2 and 3, column 6, line 23 to column 7, line

6). The drive unit is under the command of a control unit, 11, 15, 17 (column 5, line 44 to column 6, line 7). Furthermore the activation element is connected via a part 14 to a stationary part in the form of the clamp 12, best seen in figure 1.

It is common ground that the device comprises a sensor 150 that indicates pressure on the spoon 60.

Furthermore, it is not disputed that the sensor is a piezo element (column 8, line 58 to column 9, line 5, figures 12 a and 12b).

- 3.1.1 Leaving aside the question as to whether or not the piezo element is arranged to record deviations in force as claimed, novelty of claim 1 hinges on whether E2 discloses an article of furniture as claimed.

It is certainly true that E2 mentions furniture articles (column 4, lines 46-54). In particular, the feeding device described above is arranged so that it can be clamped to, for example, a table or bed. Both are articles of furniture. The Board must therefore address the question as to whether, when so clamped, the feeding device is incorporated into and therefore becomes part of the article of furniture as the respondent has argued and as the decision found (see reasons, point 2.2).

- 3.1.2 In the Board's view this is not the case. Rather, the Board considers that when clamped to a piece of furniture such as a table, the feeding device remains a discrete element, albeit temporarily secured to the tabletop by clamp 12. Nor does the Board think the table takes on new features, merely because the device is clamped to it. Just as a desk-light clamped to a table does not become a table nor the table a lamp, so

too the device described in E2 remains a feeding device, rather than becoming an article of furniture when clamped to one. By the same token the features of the table remain unchanged.

3.1.3 Nor does the Board take the absence of any reference to a feeding device without a clamp (cf. E2, column 4, lines 48 to 54) to mean that a feeding device incorporated into a piece of furniture is not expressly excluded and therefore must be included in E2's disclosure. Such an interpretation would be neither a direct nor an unambiguous disclosure, since it is purely based on a hypothetical embodiment and in contradiction to the only one that is actually disclosed, which always has a clamp 12.

3.1.4 Therefore the Board finds that E2 does not disclose an article of furniture as claimed. Consequently the Board holds the subject matter of claim 1 to be novel with respect to E2.

3.2 Novelty with respect to E3

It is no longer disputed that E3 represents prior art, made available to the public prior to the filing date of the patent in suit. Nor does the Board have any reason to doubt this (cf. all the pages of E3 have date stamps prior to the date at which the application was laid open, indicated at publication code (41) and prior to the contested patent's priority) .

E3 (see figures 1 and 2, and its English translation page 2, line 30 to page 4, line 23) discloses a table, thus an article of furniture, having a stationary part 2 and an adjustable element, namely a height adjustable tabletop 1. It is common ground that the table includes

a movable activation element (page 3, lines 4 to 6, page 5, lines 8 to 9) arranged with respect to the adjustable element tabletop and stationary part in the manner claimed. Furthermore the adjustable tabletop is driven by a drive unit with an electric motor 3 under control of a control unit ("electronics", page 4, lines 8-11 and page 5, line 19).

Furthermore it is undisputed that the table comprises a sensor 4 in the form of "load cell" which may include e.g. strain gauge(s) (page 4, line 16, page 5, lines 11 and lines 17 to 23) and that the sensor 4 is arranged in connection with one of the attachment points of the drive unit (page 3, lines 16-22 and figures 1 and 2) so that in response to signals from the sensor 10 the motor can be stopped/reversed (page 3, line 26 to page 4, line 2).

Without prejudice to the question as to whether or not the load cell records deviations in force as claimed, the question of novelty vis-à-vis E3 turns on whether the load cell 4 of E3 is formed by a piezo element as the respondent has argued.

- 3.2.1 E3 does not explicitly mention the word "piezo". The Board therefore needs to consider whether the above feature is implicitly disclosed. As with explicit disclosures, the standard applied is the direct and unambiguous disclosure of a feature. In this context "implicit disclosure" means a disclosure which any person skilled in the art would objectively consider as necessarily implied by the explicit content, see e.g. Case Law of the Boards of Appeal, 7th edition, 2013 (CLBA), I.C.3.3, and the decisions cited therein.

3.2.2 As explained above, E3 discloses a sensing load cell, exemplified by a strain gauge. The respondent has argued that such a strain gauge would implicitly, that is necessarily, comprise a piezo element.

3.2.3 The Board disagrees. The Board is of the opinion that a common type of strain gauge known to the skilled person is the foil type strain gauge. It typically comprises a meander pattern of metal conductors on a flexible backing strip. The skilled person knows that such strain gauges principally work by detecting changing resistance due to geometric distortion of the metal conductors under strain.

Whether or not the metal conductors of foil strain gauges may also demonstrate piezo-resistive effects, the skilled person knows such strain gauges only as foil strain gauges. They would not consider them as comprising a piezo element. In particular, the skilled person knows foil strain gauges, with their meandering metal conductors, as a particular class of strain gauge, distinct from semiconductor strain gauges that rely on the strong piezo-resistive characteristics of the semiconductor to detect strain. By the same token, the skilled person also sees a foil strain gauge as different from a piezoelectric strain gauge that detects strain by monitoring electric charge generated by piezoelectric elements, such as quartz crystals, when subjected to changing forces.

That the skilled person knows these classes of strain gauge to be different is confirmed by the text book E4. E4 describes principles for measuring strain in load cells (German "Kraftaufnehmer"). There the important detection principles include monitoring deformation according to the foil strain gauge principle (in German

"Dehnmeßstreifen", or DMS for short) or according to the piezoresistive principle. Alternatively by detecting tension induced charges using the principle of piezoelectricity (see text book E4, page 399, measurement principles section (German "Meßprinzipien"), second and third bullet points).

Thus the skilled person knows the terms "load cell" or "strain gauge" to include devices, such as metal foil strain gauges, that have no piezo elements. Therefore the terms themselves do not inevitably imply the presence of a piezo element.

3.2.4 Furthermore, the Board is not convinced by the respondent's argument that the particular arrangement of the strain gauge disclosed in E3 means that it must have a piezo element, in other words that it cannot be of a different type, such as a metal foil strain gauge.

Firstly, the Board is not persuaded that foil type strain gauges are only used on large structures such as bridges as the respondent has speculated. In the Board's view, because foil strain gauges are small they can detect strain on any structure to which they are attached, regardless of the structure's overall dimensions. Thus the Board sees no reason why they could not be used in the table of E3.

Secondly, the Board sees nothing in E3 which would preclude the strain gauge disclosed from being of the foil type. The load-cell e.g. strain gauge disclosed is assigned the reference 4. In both figures 1 and 2, reference 4 points to a line across a U-shaped element. The U-shaped element of figure 1 supports the table top, whilst that of figure 2 supports the motor 3. Nowhere is the U-shaped element described in E3, let

alone does the text indicate whether the U-shaped element is divided into two halves with a piezoelectric element sandwiched there between along the line 4 as the respondent would have it, or whether the line 4 merely shows the position of a strain gauge on the U shaped element.

Where the two arms of the U shaped element join, that is along the line 4, the element will be subject to strain and deform when the the arms of the U approach or separate. For example, this would happen if the table meets a resistance during adjustment, causing a sudden change in load (reference 7 in figures 1b and 2b, cf. page 5, lines 17-20 page 6, lines 1 to 8). The Board holds that it is entirely feasible that a foil type strain gauge with its flat foil shape, adhered perpendicular to and overlapping the line 4, would be ideally suited for detecting such strain. Thus, in the Board's opinion, nothing in E3 prevents the load cell strain gauge 4 from being of the foil type, thus one *not* having a piezo element.

3.2.5 In summary, the Board holds that there is no direct and unambiguous disclosure in E3 of a sensor comprising a piezo element. Consequently the Board holds that the subject matter of claim 1 is novel vis-à-vis E3.

3.3 Novelty with respect to E5

E5 discloses a height adjustable table, thus an article of furniture. Furthermore it is undisputed that it comprises a control unit 7 a drive unit 5, 6, with an electric motor 4, and a sensor 10 for measuring motor load. In response to signals from the sensor 10 the motor can be reversed (page 2, lines 15 to 22). In the detailed embodiment the sensor 10 detects motor current

with current sensors 12 (page 3, lines 9-12 and figure). However in an alternative arrangement motor load can be detected with a pressure sensor ("Drucksensor" in German, see page 2, lines 34 to 36). The respondent has argued that the skilled person reads pressure sensor as implying a piezoelectric element.

- 3.3.1 Without prejudice to the question as to whether or not the sensor records deviations in force as claimed, the question of novelty vis-à-vis E5 depends, inter alia, on whether the pressure sensor mentioned is formed by a piezo element as the respondent has argued.

The Board finds this not to be so. It is not in dispute that E5 does not mention the word "piezo". Thus for the pressure sensor disclosed therein to comprise a piezo element this must be implied by the explicit features (see above point 3.2.1). Nothing in E5 gives any hint as to what kind of pressure sensor is intended. Nor is any such sensor shown in the figure. Whether or not pressure sensors commonly comprise piezo elements as the respondent has argued, piezo elements are far from being the only kind of known pressure sensors.

The skilled person knows from their general knowledge that pressure sensors can, for example, work according to the principle of measuring changes in inductance as changes in pressure move a core in and out of an inductive coil (see E4, page 389, last paragraph and page 392, table 8-5). Such sensors are known as inductive pressure sensors and have no piezo elements. Other pressure sensors work without the use of piezo elements by measuring changes in capacitance caused by changes in pressure (see E4, page 387, section 8.2.3).

Thus when the skilled person reads pressure sensor in E5, far from reading this as being synonymous with a piezo element, they would recognise this as a generic term that covers a wide variety of different types of pressure sensor, which, besides those based on a piezo effect, also include for example, inductive and capacitive pressure sensors, that could be used to detect motor load. Since it is well-established case law that a generic disclosure does not take away the novelty of the disclosure of a species or subclass, the Board can but conclude that there is no direct and unambiguous disclosure of a piezo element in document E5.

3.3.2 Consequently the Board holds that, irrespective of whether E5 constitutes prior art within the meaning of Article 54(2) EPC, it cannot be prejudicial to the novelty of claim 1.

3.4 In conclusion the Board holds that the subject matter of claim 1 is novel vis-à-vis E2, E3 and E5 and that this ground of opposition does not prejudice maintenance of the patent as granted, contrary to the finding of the decision under appeal, Article 100(a) in conjunction with Article 52(1) with Article 54(1) EPC.

4. Remittal

4.1 In accordance with Article 111(1) EPC, second sentence, the Board of Appeal may either exercise any power within the competence of the department which was responsible for the decision appealed or remit the case to that department for further prosecution.

4.2 Since the main purpose of the appeal proceedings is to give the losing party a possibility to challenge the decision of the opposition division on its merits (see G00010/91, point 18), remittal in accordance with Article 111(1) EPC is normally considered by the Boards in cases where the opposition division issues a decision solely upon a particular issue (e.g. novelty) and leaves other substantive issues e.g. regarding inventive step (Article 56 EPC) undecided.

4.3 In the present case the opposition division did not allow the main request (rejection of the opposition) because it found the subject matter of claim 1 of the patent as granted to lack novelty. It did not consider the remaining grounds of opposition raised against that claim, namely insufficiency of disclosure (Article 100(b) EPC), and lack of inventive step (Article 100(a) EPC).

Furthermore the opposition division did not examine any of the opposition grounds raised against further independent claim 20, a claim not present in the claim set the opposition division found could be maintained. These grounds were namely lack of novelty and inventive step (Article 100(a) EPC), insufficiency of disclosure (Article 100(b) EPC) and extension of subject matter (Article 100(c) EPC).

Dealing with the large number of unresolved examination issues that could arise in the present case would require considerable investigative effort. This would go far beyond the primary purpose of these appeal proceedings, namely that of reviewing the impugned decision's finding that the subject matter of claim 1 as granted lacked novelty.

Nor does the Board see that assessing inventive step of claim 1 as granted would necessarily achieve procedural efficiency. Dependent on the outcome of such a discussion, many additional issues might remain unresolved and entirely unexamined by the opposition division. Therefore even if the Board were to examine inventive step of granted claim 1, the case might still need to be remitted to the first instance so as not to deprive the parties of first instance consideration of these remaining issues, as the appellant has requested.

- 4.4 Furthermore, the Board informed the parties in a communication that, in view of the further examination that might need to be conducted it considered it appropriate to remit the case, should it find the subject matter of claim 1 to be novel (see communication of 21 October 2015, point 3).
- 4.5 Neither party commented or objected to this proposal in the course of the written proceedings. Nor has the respondent provided any concrete arguments during the course of the appeal proceedings in respect of inventive step of claim 1 as granted. Waiting until the very last moment, namely at the oral proceedings, to object to the Board's proposed remittal and reveal arguments in respect of inventive step for the first time in appeal proceedings, could but surprise both the proprietor and the Board. In the Board's view, a proper consideration by the proprietor to counter such arguments would not be feasible without adjourning the oral proceedings for this purpose.

4.6 The Board points to the principle that in a fair procedure parties should not be confronted with issues which they cannot legitimately be expected to deal with without proper preparation, see for example Article 13(3) RPBA relating to the very limited possibility of admitting changes in a party's case after oral proceedings have been arranged, that is in the final stages of an appeal procedure. This article strives to strike a proper balance between the legitimate interest of parties to be able to defend their case properly on one hand and procedural efficiency on the other. In the present circumstances and applying this underlying principle the Board is of the opinion that a fair discussion of inventive step would only be possible upon adjournment of the appeal proceedings at the cost of procedural efficiency. For this reason it holds that remittal is justified.

4.7 For all these reasons the Board decided not to deal with the issue of inventive step of claim 1 of the patent as granted as the respondent requested, but to remit the case to the opposition division for further prosecution.

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 for further prosecution.

The Registrar:

The Chairman:



G. Magouliotis

A. de Vries

Decision electronically authenticated