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Datasheet for the decision of 10 February 2014

Case Number: T 2269/09 - 3.4.02

Application Number: 02806419.4

Publication Number: 1440305

IPC: G01N21/35, G01N33/497, A61B5/08

Language of the proceedings: EN

Title of invention:
MEASURING HEAD FOR A GAS ANALYSER

Applicant:
Phasein AB

Headword:

Relevant legal provisions:
EPC Art. 56

Keyword:
Oral proceedings - non-attendance of party
Inventive step - (no)

Decisions cited:

Catchword:

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Case Number: T 2269/09 - 3.4.02

D E C I S I O N
of Technical Board of Appeal 3.4.02
of 10 February 2014

Appellant: (Applicant)	Phasein AB Box 151 111 73 Stockholm (SE)
Representative:	Karlström, Lennart Noréns Patentbyrå AB Box 10198 100 55 Stockholm (SE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 14 July 2009 refusing European patent application No. 02806419.4 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman: D. Rogers
Members: A. Hornung
F. J. Narganes-Quijano

Summary of Facts and Submissions

I. The applicant (appellant) has appealed against the decision of the examining division refusing the European patent application 02806419.4 on the basis of Article 54(1) and (2) EPC.

II. The appellant requested to set aside the decision of the examining division and to grant a patent on the basis of an amended set of claims filed with his letter dated 16 November 2009. This claim request constituted the main and sole claim request of the appellant.

As an auxiliary measure, the appellant requested oral proceedings.

III. In a communication annexed to the summons to oral proceedings, the board informed the appellant about its provisional and non binding opinion on patentability of the claimed subject-matter. Reference was made to documents D1 [US 6,039,697], D3 [US 4,314,564] and D5 [US 5,231,591].

The board's opinion was worded as follows:

1. "Novelty

In the provisional opinion of the board, the subject-matter of claim 1 appears to be novel over D1, D3 and D5.

In particular, the claimed measuring head appears to be novel over D3 (Article 54(1) and (2) EPC), because the following features (i) and (ii) do not seem to be disclosed in D3:

1.1 Feature (i): The measuring head of claim 1, including a signal processing unit, is adapted to be placed on an

adapter, with the understanding that, according to claim 1, the adapter is such that it may be "connected at one end to a hose that leads to a patient and at the other end to a respirator".

Indeed, there is no explicit nor implicit disclosure in D3 that its signal processing unit, be it the whole circuit means (22-37; figure 1 of D3) or only a part of it, is of a nature (i.e. volume, weight, shape) compatible with it being included in a measuring head which is placeable on the adapter as described in claim 1. D3 simply leaves the question open whether its circuit means (22-37), or part of it, forms an assembly with the sensing means (3), the assembly being adapted to be placed on the adapter.

1.2 *Feature (ii): The measuring head comprises a filter wheel including a number of optical band-pass filters.*

Even though the examining division and the applicant (see his letter of 16 November 2009, page 3, lines 1-2) seem to agree that "the light receiver includes a filter wheel [...] including a number of optical band-pass filters", it is currently not evident from the examination file where D3 discloses band-pass filters. Indeed, D3, column 3, lines 55-58, merely refers to "a filter (16) for alcohol and a filter (17) for water", expression which seems to cover band-pass, low-pass and high-pass filters.

1.3 *Besides features (i) and (ii), D3 seems to disclose all the other remaining features of present claim 1.*

In particular, claim 1 refers to items, such as respiratory gases, a patient, a respirator, an adapter, a hose, which do not belong to the claimed subject-matter. The implied limitations, if any, are not sufficient to provide novelty to the claimed measuring head.

2. Inventive step

The claimed measuring head appears to lack an inventive step with respect to D3 (Article 56 EPC).

2.1 The claimed measuring head differs from the device of D3 in that it comprises features (i) and (ii). Features (i) and (ii) are technically unrelated and do not provide a synergistic effect. Hence, inventive step of claim 1 is assessed by considering the partial problems solved by each of the features (i) and (ii) separately.

2.2 As noted already by the examining division, (see point 1 of the additional remarks on page 7 of the refusal), the objective technical problem solved by feature (i) is to render the measuring device of D3 more compact and easier to use.

The signal processing unit of D3 carries out rather conventional functions such as pre-amplification, analog-to-digital conversion, subtraction and division (see D3, column 4, line 1 - column 5, line 10). The board considers that the implementation of these signal processing steps via a compact printed circuit board including a microprocessor forms part of the knowledge of the man skilled in the art.

A transmitter (10), a detector (21), a filter wheel (15) with at least two filters (16, 17) and a filter wheel drive (40) are already present in the measuring head (3) of D3. As disclosed in D3, their combined volume and weight is suitable for being placed as an assembly (3) on the breathing tube (1) (see figure 1 of D3 and column 3, lines 51-52). It appears that the volume and weight of a redesigned signal processing unit can be made sufficiently small with respect to the

existing measuring head (3) such that the combined assembly would still be compatible with being placed on an adapter.

It is to be noted that an example of the technical feasibility of integrating a detector and a signal processing unit is shown in D1, which discloses a complex light detecting device and explicitly refers to a "detector array [which] may include preamplifier circuits which function to condition the signals generated by the detectors in the array for transmission via electrical circuitry to [the] processor" (see D1, column 10, lines 28-32) and to a "processor [which] may be integral with the detector array" (see D1, column 10, line 40).

Therefore, feature (i) lacks any inventive step with respect to D3 and general common knowledge.

2.3 *It would appear that feature (ii) solves the problem of improved rejection of unwanted wavelengths falling onto the detector. The board considers that it is common general knowledge to use band-pass filters, centered onto the wavelength to be detected, for improving the detection of an optical signal having a specific wavelength. See, for instance, D5, column 18, lines 4-15. See also page 3, lines 1-14 of the present application describing band-pass filters in the prior art document WO 91/18279.*

Therefore, in the light of the disclosure of D3, it would be obvious for the skilled person to implement the filters of D3 for alcohol and for water as band-pass filters, centered on the optical absorption wavelengths at 3.4 microns and 2.7 microns, respectively (see D3, column 3, lines 53-58).

Consequently, feature (ii) lacks an inventive step with respect to D3 and general common knowledge."

IV. In response to the summons to oral proceedings, the appellant informed the board with his letter dated 28 January 2014 that he would not be represented in the oral proceedings. The appellant filed no comments concerning the board's preliminary opinion as annexed to the summons.

V. Following the appellant's letter of 28 January 2014, the oral proceedings were cancelled.

VI. Independent claim 1 of the appellant's main and sole claim request reads as follows:

"1. A measuring head for the main flow analysis of respiratory gases to and from a patient connected to a respirator, wherein the measuring head includes an aperture (7) which is to be placed over an adapter (2) connected at one end to a hose that leads to the patient and at the other end to a respirator, and through which respiratory gases flow, said adapter being placed in close proximity to the patient's mouth or trachea, wherein the measuring head (1) also comprises a light transmitter (9) which includes an IR-emitter (12) on one side of the aperture (7) and a light receiver (10) which includes an IR-detector on the other side of said aperture (7), characterised in that the measuring head (1) is adapted to be placed over the adapter in the close proximity to the patient's mouth or trachea to measure all the respiratory gases occurring in the gas flow, that the measuring head (1) being placed on the adapter also includes a signal processing unit (20) necessary for the gas analysis of different gases and that the light receiver (10) includes a filter wheel (16) being rotated by a miniaturised motor (15) comprised in the measuring head and including a number of optical band-pass filters."

Reasons for the Decision

1. In the annex to the summons, the board expressed its view that the subject-matter of claim 1 appears to lack an inventive step with respect to document D3 within the meaning of Article 56 EPC (see above, point III).

2. The appellant neither attempted to rebut the board's provisional opinion, nor submitted any new requests aiming at overcoming the objections. The board sees no reason to deviate from its preliminary opinion.

3. It follows that the present patent application does not meet the requirements of Article 56 EPC for the reasons set out in the board's preliminary opinion.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

M. Kiehl D. Rogers

Decision electronically authenticated