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Datasheet for the decision of 1 October 2014

Case Number: T 1861/09 - 3.5.02

Application Number: 02721362.8

Publication Number: 1382024

IPC: G08B21/00, A61B5/00, A61B5/11, G08B21/04

Language of the proceedings: EN

Title of invention:
SYSTEMS WITHIN A POSITION LOCATOR DEVICE FOR EVALUATING MOVEMENT OF A BODY

Applicant:
Ilife Solutions, Inc.

Headword:

Relevant legal provisions:
EPC Art. 56, 83, 123(2)

Keyword:
Inventive step - main request (no)
Added subject-matter - first auxiliary request (yes)
Sufficiency of disclosure - second auxiliary request (no)

Decisions cited:

Catchword:

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Case Number: T 1861/09 - 3.5.02

D E C I S I O N
of Technical Board of Appeal 3.5.02
of 1 October 2014

Appellant: (Applicant)	Ilife Solutions, Inc. 5910 North Central Expressway, Suite 1775 Dallas, TX 75206 (US)
Representative:	Bettridge, Paul Sebastian Carpmaels & Ransford LLP One Southampton Row London WC1B 5HA (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 12 March 2009 refusing European patent application No. 02721362.8 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	M. Ruggiu
Members:	H. Bronold
	P. Mühlens

Summary of Facts and Submissions

I. The appeal concerns the decision of the examining division, posted on 12 March 2009, to refuse European patent application No. 02721362.8.

II. In a communication that was posted on 14 May 2014, the board cited a new prior art document (D6) and indicated their concerns as to novelty and inventive step of the independent claims of the main request as well as to inventive step of the independent claims of the auxiliary request.

III. With letter dated 1 September 2014, the appellant filed new requests.

IV. Oral proceedings were held before the Board on 1 October 2014. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims of the main request or on the basis of the claims of one of the first or second auxiliary request, all filed with letter dated 1 September 2014.

V. The following documents are relevant for the present decision:

D1: US 6,160,478 (2000-12-12)

D6: Analog devices, "Low cost ±2g/±10g Dual Axis iMEMS® Accelerometers with Digital Output"; data sheet for accelerometers ADXL202/ADXL210, dated 1999.

VI. Claim 1 of the main request reads:

"A system (11) within a position location device capable of evaluating movement of a body relative to an environment, said system comprising:
a sensor (25), associable with said body, that senses dynamic and static accelerative phenomena of said body; and
a processor (47), associated with said sensor (25), that processes said sensed dynamic and static accelerative phenomena as a function of at least one accelerative event characteristic to thereby determine whether said evaluated body movement is within environmental tolerance,wherein the processor is further configured to:
determine a last stable static acceleration value corresponding to a last stable position of the body;
distinguish dynamic acceleration of the body exceeding a dynamic acceleration threshold; and
compare to said last stable static acceleration value a later stable static acceleration value corresponding to a later stable position of the body determined after a dynamic acceleration of the body in excess of said threshold is distinguished."

VII. Claim 1 of the first auxiliary request differs from claim 1 according to the main request inter alia in the following additional feature:

"when said sensed dynamic acceleration phenomena do not exceed said threshold value, determine a last stable static acceleration value corresponding to a last stable position of the body".

VIII. Claim 1 of the second auxiliary request differs from claim 1 of the main request in the following additional features:

"issue an alert signal when said evaluated body movement is not within environmental tolerance; and filter said output signals to significantly reduce the probability of an alert signal due to single sharp impacts unrelated to said body movement."

IX. The appellant essentially argued as follows:

D1 disclosed a system capable of evaluating the movement of a body relative to an environment in which a sensor returned values indicating that the body was in certain positions. The system of D1 was based on comparing two stable positions of the body. By contrast the system of the invention compared last and later acceleration values. Thereby the system of the invention was quicker in determining that a debilitating fall had occurred. The setting of a flag as mentioned in the description was one in which the invention might be executed.

Furthermore the invention used a single sensor for sensing both dynamic and static accelerative phenomena of the body while D1 used two distinct sensors.

Claim 1 of the second auxiliary request related to the problem of reducing the probability that a single sharp impact would incorrectly result in the issuance of an alert signal. To solve this problem D1 suggested a manual override to block issuance of the alert. The solution provided by the invention was therefore not suggested in D1 and thus was not obvious. The skilled person, by applying routine procedures, would be able to characterise a filter (band pass, low pass or high pass filter) distinguishing impact events. Thus, the original application provided enough information to the skilled person to enable him to carry out the claimed invention.

Reasons for the Decision

1. The appeal is admissible

2. Main request - Article 56 EPC

2.1 According to the appellant, the difference between the subject-matter of claim 1 and the disclosure of document D1 is that according to claim 1 a comparison was made between static acceleration values corresponding to said last and later stable positions of the body, respectively. Document D1 merely disclosed a comparison of positions of the body but not a comparison of the corresponding sensor readings. Therefore, the system according to the invention operated faster than the system according to document D1.

However, the Board notes that according to the description of the application, page 21, lines 5 to 16, a "laying down detect flag is set" and while "this flag is set, any impact that exceeds the G-force threshold is treated as a debilitating fall". From this passage of the description it is clear that the claimed invention bases its comparison on the position of the body and not on sensor readings.

Thus, the subject matter of claim 1 works in the same way as the system disclosed in document D1, column 6, lines 28 to 39, where it is stated that "if the sensor data from sensor 60 indicates that the person was in a vertical position and sensor 58 sensed walking movement prior to a spike pulse, sensor data from sensors 58 and 60 after the spike pulse may provide information to adequately determine whether or not the person has

fallen" and the "severity of such fall may also be determined by the magnitude of the spike pulse".

Therefore, the Board can not recognise any difference between the comparison carried out according to the subject-matter of claim 1 and the comparison carried out according to document D1.

2.2 The appellant further argued that the single sensor of claim 1, that senses both dynamic and static accelerative phenomena, was not disclosed in document D1 since according to document D1 two separate sensors 58 and 60 are required to provide the functionality of the sensor according to claim 1.

The Board notes however, that in column 5, lines 27, 28, 38 and 39 of document D1 it is stated that the activity sensor comprises "at least one accelerometer 58" and "further includes a position sensor 60". Moreover, the wording of claim 1 does not require that the sensor of claim 1 is a single sensor. The sensor of claim 1 is merely defined by its desired function of sensing both dynamic and static accelerative phenomena. According to document D1 an activity sensor is provided comprising an accelerometer and a position sensor.

The description of the application discloses on page 15, lines 6 to 13 that a dynamic acceleration component of the sensor output means a voltage component proportional to G forces and that a static acceleration component means a voltage component proportional to an angle relative to earth. A device wich provides a voltage component proportional to G forces is typically called an accelerometer. Thus, for the skilled person the accelerometer of document D1 falls under the definition of a sensor capable to sense dynamic

accelerative phenomena. Further, a voltage component proportional to an angle relative to earth can be measured with a position sensor. Therefore, the position sensor of document D1 falls under the definition of a sensor capable to sense static accelerative phenomena. It seems therefore, that the sensor according to claim 1 is disclosed in document D1.

Even assuming, for the sake of argument, that the sensor of claim 1 would not be known from document D1, the alleged integrality of the sensor according to claim 1 would represent the only difference between the disclosure of document D1 and the subject matter of claim 1. The objective problem could be regarded as to provide the system according to claim 1 with an alternative sensor that is more compact and cost efficient.

Document D6 discloses on page 1, right hand column, sensors that "...can measure both dynamic acceleration (e.g. vibration) and static acceleration (e.g. gravity)" and on page 6, left hand column that these sensors are provided on "a single monolithic IC". Moreover, document D6 states that the sensors are low cost and low power.

Hence, the skilled person looking for a compact and cost efficient sensor for evaluating acceleration and position of a body would consider the disclosure of document D6 and would combine the sensor of that document with the system of document D1 and arrive at the subject matter of claim 1 in an obvious manner.

2.3 Consequently, the subject matter of claim 1 according to the main request does not involve an inventive step in the sense of Article 56 EPC.

3. First auxiliary request - Article 123(2) EPC

According to one of the features added to claim 1 the processor of claim 1 is further configured to:

"when said sensed dynamic acceleration phenomena do not exceed said threshold value, determine a last stable static acceleration value corresponding to a last stable position of the body".

According to figure 4, determination of the last stable position is performed before an impact is detected, see steps 415 and 420 of figure 4.

The application as filed does not contain any disclosure which suggests that the determination of the last stable static acceleration value is triggered by the sensed dynamic acceleration phenomena not exceeding the threshold.

Hence, the added feature has no basis in the application as originally filed.

Consequently, the first auxiliary request does not meet the requirements of Article 123(2) EPC.

4. Second auxiliary request - Article 83 EPC

Article 83 EPC - Insufficient disclosure

4.1 According to Article 83 EPC, the European patent specification shall disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

In the present case, the last feature of claim 1 reads: "filter said output signals to significantly reduce the probability of an alert signal due to single sharp impacts unrelated to said body movement."

Thus, a prerequisite of claim 1 is a filter that can distinguish single sharp impacts unrelated to said body movement from single sharp impacts that are related to said body movement.

The only piece of disclosure relating to such a filter is that found on page 19, lines 21 to 27 of the originally filed description which reads:

"In the present implementation, the measurement signals are converted from analog to digital format and filtered by filter 55 (Step 410; thereby reducing probability that an out of tolerance abnormal movement will be determined incorrectly in response to a single sharp impact, such as a collision between mount 17 and a hard surface when sensor 25 is off the body causing a sharp signal spike)."

The cited piece of disclosure merely describes the desired function of the filter but does not define how the function of the desired filter could be achieved.

4.2 The applicant argued that the skilled person interprets filter 55 according to the disclosure on page 19 such that conventional filters like low-pass filters, high-pass filters or band-pass filters are implemented in

digital manner. Further according to the applicant, such a conventional filter applied to the output signal of the sensor according to claim 1 would be able to achieve the desired filtering function. Thus, the skilled person knew from the disclosure of the application how to construct a filter according to claim 1.

4.3 However, the Board doubts that it is possible to distinguish a sharp signal spike unrelated to body movement from a sharp signal spike related to body movement merely by a low-pass, high-pass or band-pass filtering. The function of the desired filter requires a distinction of the circumstances which led to the sharp signal spike and not a distinction of frequencies of the signal spike. A conventional filter can only deliver the latter function. Therefore, the digital implementation of a conventional frequency filter does not disclose how to create a filter that would be able to provide the functionality as claimed in claim 1. Thus, the disclosure of the characteristics merely describes the problem to be solved, namely find a filter that can distinguish sharp signal spikes unrelated to body movement from sharp signal spikes related to body movement.

The disclosure of the invention must, however, be reproducible without undue burden. While it can be accepted that some degree of experimentation can be required in some cases, experiments amounting to a research program directed at finding the solution to the problem posed by the disclosure of the invention constitute an undue burden. This is exactly what the skilled person would need to do in the present case in order to develop a filter that is capable of providing the function claimed in claim 1.

Besides that, the problem posed by the disclosure of the invention is obvious since the elimination of accidental sensing of out of tolerance events is normal routine design for body movement monitoring systems. Moreover, no technical solution to this posed problem can be found in the disclosure of the application.

4.4 Consequently, the Board is of the opinion that the originally filed application does not disclose the invention according to claim 1 in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

Therefore, the second auxiliary request does not meet the requirements of Article 83 EPC.

5. Conclusion

Consequently, none of the requests of the appellant is considered to meet the requirements of the EPC.

Order

For these reasons it is decided that:

The appeal is dismissed

The Registrar: The Chairman:

U. Bultmann M. Ruggiu

Decision electronically authenticated