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**Datasheet for the decision
of 19 February 2019**

Case Number: T 1823/15 - 3.4.03

Application Number: 11773509.2

Publication Number: 2625674

IPC: G07G1/00, G01G19/42

Language of the proceedings: EN

Title of invention:
CASH TILL LOAD CELL

Applicant:
Cash Bases Limited

Headword:

Relevant legal provisions:
EPC Art. 52(1), 56, 84, 111(1), 123(2)

Keyword:
Amendments - added subject-matter (no)
Claims - clarity (yes)
Remittal to the department of first instance - (yes)

Decisions cited:
T 1227/05, T 1784/06

Catchword:



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Case Number: T 1823/15 - 3.4.03

D E C I S I O N
of Technical Board of Appeal 3.4.03
of 19 February 2019

Appellant: Cash Bases Limited
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Representative: Dehns
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted on 16 April 2015
refusing European patent application No.
11773509.2 pursuant to Article 97(2) EPC.

Composition of the Board:

Chairman G. Eliasson
Members: S. Ward
C. Heath

Summary of Facts and Submissions

I. The appeal is against the decision of the Examining Division refusing European patent application No. 11 773 509 on the grounds that the claimed subject-matter did not meet the requirements of Articles 123(2) and 84 EPC and did not involve an inventive step within the meaning of Article 56 EPC.

II. The appellant requested in writing that the decision under appeal be set aside and that a patent be granted on the basis of the main request (claims 1-12) filed with the letter dated 19 December 2018, or failing that, on the basis of the auxiliary request filed with the statement of grounds of appeal. Oral proceedings were requested if the decision could not be overturned in the written proceedings.

III. The following documents are referred to:

D4: US 2009/0236431 A1

D7: GB 2 417 093 A

D9: WO 2008/035087 A1

D10: EP 0 724 242 A2

IV. Claim 1 of the main request reads as follows:

*"A method of determining a reference reading from a load cell (6) of a cash till using a monitoring apparatus comprising means adapted to carry out the method, the method comprising:
taking a plurality of readings successively from the load cell (6);
characterised in that said method further comprises:*

*comparing a given reading with a subsequently taken reading (104);
storing the given reading in memory as a verified value (106) if the subsequently taken reading differs by less than a predetermined amount from the given reading;
storing the subsequently taken reading in memory as the given reading after the comparison;
comparing the given reading with a subsequently taken reading;
storing the given reading in memory as a verified value if the subsequently taken reading differs by less than a predetermined amount from the given reading;
continuing to take successive readings from the load cell (6) and to perform comparisons until a predetermined number of verified values has been stored in memory;
calculating an average value for the predetermined number of verified values; and
storing the average value in memory as a reference reading for the load cell."*

V. The findings of the Examining Division, insofar as they are relevant to the present decision, may be summarised as follows:

(i) The subject-matter of claim 1 of the third auxiliary request [which is closest to claim 1 of the present main request] did not meet the requirements of Articles 84 and 123(2) EPC, as the term "monitoring apparatus" had been introduced without having any relation with the claimed "memory". The claimed "memory" could be a memory which was outside the monitoring apparatus, which constituted added subject-matter and a led to a lack of clarity.

(ii) The subject-matter of claim 1 (all requests) did not involve an inventive step. Document D9 disclosed "a cash till", and hence the claimed subject-matter differed from the method of D9 only in the rule which defined that "a given reading is compared with a subsequently taken whereby the subsequently taken reading should differ by less than a predetermined amount from the given reading."

This rule was non-technical because it was a mathematical method (mathematical algorithm) and could be performed without any technical means. If this rule/method had been claimed as such (i.e. without any further technical means), it would have been excluded from patentability (Article 52(2)(a) EPC).

Where a claim referred to an aim to be achieved in a non-technical field, this aim might legitimately appear in the formulation of the problem as part of the framework of the technical problem to be solved, in particular as a constraint that had to be met (see EPO Guidelines G-VII §5.2).

The problem to be solved by the present invention might therefore be regarded as adapting the predetermined rule of the reading method of D9 to another predefined rule, as defined in claim 1.

This adaptation would be a matter of reprogramming the system or redesigning the electronic circuits according to the predetermined rule, which would be straightforward for the skilled person, who would thereby arrive in a direct way at the claimed subject-matter.

VI. The provisional views of the Board, as set out in a communication pursuant to Rule 100(2) EPC, were as follows:

There did appear to be a problem regarding the requirements of Articles 84 and 123(2) EPC, but this appeared to be relatively easily remediable.

Regarding inventive step, the feature "from a load cell of a cash till" was not disclosed in D9, but it was doubtful whether this feature rendered the claimed subject-matter inventive.

A second difference over the method of D9 resided in the claimed mathematical algorithm used to arrive at the final result (or "reference value"). This appeared to serve a technical purpose, and was thereby a technical feature of the claim.

Hence, in assessing inventive step, the question to be posed was whether the skilled person, having regard to the state of the art, would find it obvious to arrive at the invention as claimed, including the features expressed algorithmically. Since this question had not been addressed by the Examining Division, it appeared appropriate to remit the case to the department of first instance for further prosecution.

VII. The appellant filed a letter dated 19 December 2018 together with a new main request amended in the light of the comments made by the Board regarding the requirements of Articles 84 and 123(2) EPC. The appellant stated that oral proceedings before the Board were not required in the case that the Board decided to remit the case to the Examining Division for further

prosecution under the conditions set out in the communication.

Reasons for the Decision

1. *Claim 1 of the main request: Articles 84 and 123(2) EPC*

1.1 Claim 1 of the current main request is essentially based on claims 1-3 and 5 as originally filed, plus features ("reference reading", "monitoring apparatus") based on the passages cited by the appellant (page 7, lines 12-13 and page 8, lines 5-6).

1.2 Compared with the claims as refused, claim 1 now defines a monitoring apparatus "comprising means adapted to carry out the method", from which it is clear that the means (including the memory) by which the recited steps (taking readings, comparing, storing, calculating) are performed are comprised in the monitoring apparatus, thereby overcoming the objection of the Examining Division in this regard. Claim 1 of the main request therefore meets the requirements of Articles 84 and 123(2) EPC.

2. *Claim 1 of the main request: Inventive Step*

2.1 Document D9 was seen by the Examining Division and the appellant as the closest prior art, and the Board sees no reason to differ. A first disputed point was whether D9 disclosed a method of determining a reference reading "from a load cell of a cash till", as defined in claim 1 of the main request.

2.2 D9 discloses a stand-alone count by weight machine located close to a cashier's till. Implicitly, the

method of operation would appear to involve notes or coins of a particular denomination being removed from the cash till drawer (with or without their holding tray), and transferred to the count by weight machine. The number or monetary value of the notes or coins (corresponding to the claimed "reference value") is then determined from the load cell of the count by weight machine, and not "from a load cell (6) of a cash till", as claimed. This feature therefore represents a difference over D9.

2.3 The technical effect of the claimed feature is that it allows the reference value for the money to be determined *in situ* in the cash till without having to transfer it to a separate weighing machine. The problem might be seen as providing a simpler method for determining the amount of cash in the cash till.

2.4 It is acknowledged in the description (page 1, lines 19-28) that cash tills with integrated load cells for monitoring the amount of cash held for each denomination are known in the art, and have the advantage that they provide "a way to monitor the amount of cash in the till without the need to remove the cash from the till" (page 1, lines 26-28).

By way of example, the Examining Division referred to D4, which discloses a cash till drawer with weight sensors 120, and D7, which discloses a cash drawer 1 of a till having compartments, each provided with weighing platforms 5 and sensors 25 (see e.g. Fig. 3). Another example would be D10 (see abstract, Fig. 3), a document which was cited in the fax received by the EPO on 14 October 2013 containing third party observations pursuant to Article 115 EPC.

- 2.5 It would therefore be an obvious possibility for the skilled person to adopt the known arrangement of integrating load cells into the cash till to provide a simpler method for determining the amounts of cash held. Hence, no inventive step can be seen in this difference.
- 2.6 A second difference in the subject-matter of claim 1 over the method of D9 resides in the algorithm or mathematical method used to arrive at the final result (or "reference value").
- 2.7 The Examining Division decided that this mathematical algorithm was a non-technical feature (Reasons, point 2.3.1.3), hence it based its analysis on Guidelines G-VII, 5.4, which concerns claims comprising technical and non-technical features (the reference in the contested decision to "G-VII §5.2" appears to be an error; the relevant section is G-VII, 5.4, both in the version of the Guidelines in force at the time of the decision and currently).

Applying the approach set out in this section of the Guidelines, the Examining Division decided that the claim referred to an aim to be achieved in a non-technical field, which might legitimately appear in the formulation of the problem as part of the framework of the technical problem that is to be solved, in particular as a constraint that has to be met. The Examining Division therefore formulated the problem as "adapting the predetermined rule of the reading method of D9 to another predefined rule". The problem was therefore seen as merely *implementing* the claimed algorithm, and it was considered that this would be easily achievable by the skilled person (Reasons, points 2.3.1.4 and 2.3.1.5).

2.8 The approach to analysing inventive step set out in Guidelines G-VII, 5.4 applies only to claims comprising a mixture of technical and non-technical features, and it can therefore only be applied in the present case if, as contended by the Examining Division, the claimed mathematical method is to be seen as a non-technical feature.

2.9 Mathematical methods are excluded from patentability according to Article 52(2)(a) EPC, but only to the extent to which the claimed subject-matter relates to a mathematical method "as such" (Article 52(3) EPC). There has never been any dispute that the presently claimed invention does not constitute a mathematical method "as such", and is not, therefore, excluded from patentability under Article 52 EPC.

The question is rather whether the mathematical method or algorithm, which undoubtedly forms a major part of the claimed subject-matter, constitutes a technical feature of the claim (hence, to be taken into account in the assessment of inventive step) or not.

2.10 The Boards have consistently maintained that a mathematical method or algorithm appearing in a claim can be recognised as having a technical character only if it serves a technical purpose (see *Case Law of the Boards of Appeal, 8th ed., 2016, I.D.9.1.8: "Assessment of features relating to mathematical algorithms"*).

2.11 For example, in T 1784/06 a claimed algorithm only served the purpose of automatically classifying data records, and the Board did not consider the result of the algorithm (the set of classified data records) as technical. The claimed algorithm was found not to

contribute to the technical character of the method, and therefore it did not enter into the examination for inventive step. Technical considerations only came into play at the level of *implementation* of the algorithm, and since the application presupposed that a skilled programmer knew how to implement the algorithm on a general-purpose computer, no inventive step could be acknowledged (T 1784/06, Reasons, point 3).

2.12 In T 1227/05, by contrast, the claim related to a computer-implemented method for the numerical simulation of an electrical circuit which is subject to $1/f$ noise. In this case, the Board found that:

"simulation of a circuit subject to $1/f$ noise constitutes an adequately defined technical purpose for a computer-implemented method, provided that the method is functionally limited to that technical purpose."

(Reasons, point 3.1; all quotations are from the English translation of T 1227/05 appearing in OJ, 2007, 574.)

Since the claims were found to be adequately functionally limited in this sense, the Board concluded as follows:

"all steps relevant to circuit simulation - and that includes the mathematically expressed claim features - contribute to the technical character of the simulation method according to claim 1 or 2." (Reasons, point 3.2.4.)

Hence, in assessing whether the claimed simulation methods involved an inventive step, all features which contributed to the technical character of the method

were to be taken into account, including the mathematically defined steps (Reasons, point 4).

2.13 The method defined by claim 1 relates to the technical purpose of weighing (and thereby counting) physical objects (notes and coins), and Board judges that this technical purpose is adequately defined (in the sense referred to in T 1227/05) in claim 1 as "determining a reference reading from a load cell (6) of a cash till", the "reference reading" being the value derived by the defined method from a successive series of readings from the load cell.

2.14 Since the claimed algorithm serves a technical purpose, it must be regarded as a technical feature, and the claimed subject-matter therefore comprises technical features only, and not a mixture of technical and non-technical features. The approach adopted by the Examining Division is therefore inapplicable.

In assessing inventive step in the present case, the question to be posed is whether the skilled person, having regard to the state of the art, would find it obvious to arrive at the claimed invention, including the features expressed algorithmically.

2.15 Since this question has not been addressed by the Examining Division, and to allow the appellant the possibility - if necessary - to have this matter examined before two instances, the Board considers it appropriate to exercise its discretion under Article 111(1) EPC to remit the case to the department of first instance for further prosecution.

3. *Further procedure*

- 3.1 For the avoidance of doubt, the Board has decided only that claim 1 of the main request meets the requirements of Articles 84 and 123(2) EPC, and that the assessment of inventive step within the meaning of Articles 52(1) and 56 EPC should be carried out taking into account the conclusions set out above under points 2.1 to 2.15.
- 3.2 The Board makes no comment on what the result of this assessment should be, or on whether claims 2-12 of the main request meet the requirements of the EPC. These are matters for the Examining Division.

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:



S. Sánchez Chiquero

G. Eliasson

Decision electronically authenticated