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Datasheet for the decision of 11 March 2014

Case Number: T 1501/09 - 3.4.03

Application Number: 00901790.6

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IPC: G07D5/08, G07D7/00

Language of the proceedings: EN

Title of invention:
MONEY ITEM ACCEPTOR

Patent Proprietor:
COIN CONTROLS LIMITED

Opponent:
MEI, Inc. (opposition withdrawn)

Headword:

Relevant legal provisions:
EPC 1973 Art. 54, 56

Keyword:
Novelty - main request (no)
Inventive step - auxiliary request (no)

Decisions cited:

Catchword:

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Case Number: T 1501/09 - 3.4.03

D E C I S I O N
of Technical Board of Appeal 3.4.03
of 11 March 2014

Appellant: (Patent Proprietor)	COIN CONTROLS LIMITED New Coin Street Royton Oldham Lancashire OL2 6JZ (GB)
Representative:	Read, Matthew Charles Venner Shipley LLP 200 Aldersgate London EC1A 4HD (GB)
Respondent: (Opponent)	MEI, Inc. 1301 Wilson Drive West Chester, PA 19380 (US)
Representative:	Peterreins, Frank Fish & Richardson P. C. Highlight Business Towers Mies-van-der-Rohe-Strasse 8 80807 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 18 May 2009 revoking European patent No. 1151419 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman: G. Eliasson
Members: V. L. P. Frank
P. Mühlens

Summary of Facts and Submissions

I. This is an appeal by the patent proprietor against the decision of the opposition division to revoke the European patent EP 1 151 419 for lack of novelty of the main request (Article 54 EPC 1973) and for lack of inventive step of the auxiliary request (Article 56 EPC 1973).

The patent was opposed in its totality. Grounds for opposition were lack of novelty and inventive step and unallowable extension of the subject-matter of the patent (Articles 100(a) and (c), 54 and 56 EPC 1973).

II. The appellant proprietor requested in writing that the decision under appeal be set aside and that the patent be maintained as granted (main request), or that the patent be maintained in amended form on the basis of the claims of one of the first or second auxiliary requests, both filed with the statements of grounds of appeal dated 15 September 2009.
Oral proceedings were requested in the event that none of the requests was found allowable.

The respondent opponent requested that the appeal be dismissed.
Auxiliarily, oral proceedings were requested.

III. With letter of 23 January 2014 the respondent opponent withdrew his opposition, ceasing thus to be a party to the proceedings.

With letter of 24 January 2014 the appellant proprietor announced that he would not be represented at the oral proceedings and requested that a decision be made on the basis of his written submissions.

IV. Claim 1 of the patent as granted, forming the main request in appeal, reads:

"1. A money item acceptor for accepting true money items that form part of a distribution of true money items, and rejecting frauds which form part of a distribution of fraudulent money items, comprising:
a signal source (S1-S4) to produce a money item parameter signal (X_i) as a function of a sensed characteristic of a money item (8),
a store (12) to provide data corresponding to a normal acceptance range (NAW) of values of the parameter signal for a money item of a particular denomination, the range including relatively high and low acceptance probability regions wherein the value of a parameter signal (X) corresponds to a relatively high or low probability of an occurrence of sensed money item of said particular denomination,
and a processor (11) to determine when an occurrence of the parameter signal corresponding to a first money item adopts a predetermined value relationship, and in response thereto, to compare the value of a subsequent occurrence of the parameter signal corresponding to a second money item with data corresponding to a restricted acceptance range (RAW) as compared with the normal acceptance range (NAW), and to provide an output corresponding to acceptability of the second money item if the second occurrence of the parameter signal falls within restricted acceptance range, characterised in that
said predetermined value relationship occurs when the parameter signal (X_i) corresponding to the

first money item has a value within a predetermined security barrier range (USB, LSB) outside of the normal acceptance range, which is substantially aligned with the peak of the distribution for the fraudulent money items."

Claim 1 of the 1st auxiliary request reads (amendments with respect to claim 1 of the main request were marked by the board):

"1. A money item acceptor for accepting true money items that form part of a distribution of true money items, and rejecting frauds which form part of a distribution of fraudulent money items, comprising:
a signal source (S1-S4) to produce a money item parameter signal (X_i) as a function of a sensed characteristic of a money item (8),
a store (12) to provide data corresponding to a normal acceptance range (NAW) of values of the parameter signal for a money item of a particular denomination, the range including relatively high and low acceptance probability regions wherein the value of a parameter signal (X) corresponds to a relatively high or low probability of an occurrence of sensed money item of said particular denomination,
and a processor (11) to determine when an occurrence of the parameter signal corresponding to a first money item adopts a predetermined value relationship, and in response thereto, to compare the value of a subsequent occurrence of the parameter signal corresponding to a second money item with data corresponding to a **a narrower**, restricted acceptance range (RAW) as compared with the normal acceptance range (NAW), and to provide

an output corresponding to acceptability of the second money item if the second occurrence of the parameter signal falls within restricted acceptance range,
characterised in that
said predetermined value relationship occurs when the parameter signal (X_i) corresponding to the first money item has a value within a predetermined security barrier range (USB, LSB) outside of **and contiguous with** the normal acceptance range, which is substantially aligned with the peak of the distribution for the fraudulent money items."

Claim 1 of the 2nd auxiliary request reads (amendments with respect to claim 1 of the 1st auxiliary request were marked by the board):

"1. A money item acceptor for accepting true money items that form part of a distribution of true money items, and rejecting frauds which form part of a distribution of fraudulent money items, comprising:
a signal source (S1-S4) to produce a money item parameter signal (X_i) as a function of a sensed characteristic of a money item (8),
a store (12) to provide data corresponding to a normal acceptance range (NAW) of values of the parameter signal for a money item of a particular denomination, the range including relatively high and low acceptance probability regions wherein the value of a parameter signal (X) corresponds to a relatively high or low probability of an occurrence of sensed money item of said particular denomination,
and a processor (11) to determine when an

occurrence of the parameter signal corresponding to a first money item adopts a predetermined value relationship, and in response thereto, to compare the value of a subsequent occurrence of the parameter signal corresponding to a second money item with data corresponding to a a narrower, restricted acceptance range (RAW) as compared with the normal acceptance range (NAW), and to provide an output corresponding to acceptability of the second money item if the second occurrence of the parameter signal falls within restricted acceptance range,
characterised in that
said predetermined value relationship occurs when the parameter signal (X_i) corresponding to the first money item has a value within a predetermined **range comprising** security barrier ~~range~~ (USB, LSB) outside of and contiguous with the normal acceptance range **and a security margin (USM, LSM) contiguous with the security barrier and in one of the low acceptance probability regions**, which is substantially aligned with the peak of the distribution for the fraudulent money items."

V. The following documents are cited in this decision:

D1: US 5 355 989 A

D2: WO 96/36022 A

D3: EP 0 480 736 A

VI. The opposition division found in the decision under appeal that:

- The subject-matter of claims 1 and 14 of the main request (ie the patent as granted) were not new over the disclosure of document D2. D2 referred to the apparatus of the sixth embodiment stating that it corresponded to the one disclosed in D3 ("*incorporated herein by reference*"). Thereafter D2 continued to define the additional features of the sixth embodiment over D3, namely window z. According to D3, the apparatus comprised a plurality of inductive sensors and a processing and control unit. Said apparatus measured one or more coin parameters by means of these sensors. The frequency distribution of the measured parameter values allowed to determine a range which was typically achieved by valid coins. A value outside said window pointed at a fraudulent coin or slug. In view of these basic principles applied for coin validation, the apparatus of D3 corresponded to the apparatus of D2. D2 stated that after having detected a coin which fell in window z, i.e. a window which was outside the range of the acceptance window, the acceptance window running from -3 to +3 was reduced by restricting the upper limit from +3 to +2. This was a narrowing of the acceptance window, in particular since D2 explicitly used the expression *"narrowing of the coin acceptance window"*. The skilled person would understand the teaching of said passages of D2 as a narrowing and therefore restricting the window width from 6 units (i.e. -3 to +3) to 5 units (i.e. -3 to +2) rather than a lateral shift of said window.

- The independent claims of the auxiliary request (forming the 1st auxiliary request on appeal)

differed from the corresponding claims of the main request in that

i) the restricted acceptance range (RAW) was defined as being narrower and

ii) the predetermined security barrier range was contiguous with the normal acceptance range.

- The opposition division found that claim 1 differed from the sixth embodiment of D2 only in that the range for triggering the restriction and narrowing of the normal acceptance window was contiguous with the normal acceptance window, as D2 already disclosed a narrower, restricted acceptance range. It further rejected the arguments of the proprietor that the claimed subject-matter did not require the prior measurement and analysis of the slug distribution, as the patent was silent on this. It was evident from D2 that the security barrier range for triggering the restriction of the normal acceptance window had to be fixed. No advantages for using a contiguous range were derivable from the patent specification. Starting form D2, the objective problem would be to find a suitable security barrier range. This would depend on the nature of the two coin distributions, namely the valid coin distribution and the slug distribution. The skilled person would consider a contiguous range as a viable option and would thus arrive at the subject-matter of the claims without exercising an inventive step.

VII. The appellant proprietor argued in writing essentially as follows:

Main request:

- Claim 1 specified that use was made of *"a restricted acceptance range (RAW) as compared with the normal acceptance (NAW)"*. However, D2 did not disclose such a *"restricted acceptance range"*. The sixth embodiment of D2 incorporated D3 by reference. Hence a skilled person on reading the description of D2 would take into account the disclosure of D3. This would lead the skilled person to consider that the window width was laterally shifted in the manner of D3 rather than being narrowed. As explained in D3, slugs could be used to distort the continuously recalibrated center of the acceptance window (the so called F value) and cause the window to track undesirably towards the slug distribution. To overcome this problem, upon detection of a coin signal in the range z, the window was temporarily shifted to the left to cause rejection of the item under test and remained shifted to one side until a number of true coins were detected. It then was moved back to its previous position. During this process there was no change in the width of the window. The lateral shift was to avoid the self tuning process from being corrupted by data from items which could potentially be slugs. Whilst it was true that D2 disclosed that the upper window limit was restricted from +3 to +2 on detection of the slug, it was silent about what happened to the lower window limit.

- Furthermore, a skilled person would not be motivated to consider changing the window width on one side only based on a combination of D2 and D3. At the priority dates of D2 and D3,

microprocessors were much less powerful than today. Hence the motivation in D3 was to store a small number of data points that defined fixed windows so as to simplify the computation which, as well known in the art, was done on the fly when the coin was inserted. Thus, a skilled person would not be motivated to consider moving individual window boundaries because at the time, it would have been computationally difficult, unduly time consuming and hence disadvantageous when taking into account the state of technology at the priority dates of D2 or D3.

1st auxiliary request

- The independent claims have been amended to specify:
  i) that the restricted acceptance range was narrower than the normal acceptance range, and
  ii) a predetermined security barrier range both outside and contiguous with the normal acceptance range.

- The claimed contiguous nature of the ranges was not disclosed in either D2 or D3. In D2 the window z was deliberately spaced from the normal acceptance range in order to be centred upon the distribution for the slug. According to the invention, although the predetermined security barrier range was generally aligned with the distribution for fraudulent money items, it was appreciated that any value of the parameter signal that fell within a barrier range contiguous with the normal acceptance range was likely to be problematic. Hence there was no need to consider

by separate experiment where the distribution for the fraud lied. Thus, according to the invention, any coin that produced a signal in the contiguous region (USB, LSB) was used to trigger operation of the restricted window for a subsequent coin, and no direct consideration had to be given to the nature of the fraudulent distribution. In D2, prior trial or experiment was required in order to define the slug window z for a particular fraudulent coin denomination and to program such data into the device.

2nd auxiliary request

- This request was not considered during the opposition proceedings. The independent claims of the second auxiliary request were further restricted to specify that:

  the range further included a security margin (USM, LSM) contiguous with the security barrier (USB, LSB) and within one of the low acceptance probability regions.

- The feature of a security margin contiguous with the security barrier and in one of the low acceptance probability regions was not disclosed in D2 or D3 and the main claim was not obvious in view of the prior art cited in the proceedings. Considering D2, no security margin contiguous with the security barrier was provided. It was true that the system of D2 switched to an acceptance range with a shifted upper window limit when a coin parameter signal in region z was detected. However, there was no suggestion that detection of a coin parameter signal in e.g. region 730 should

be considered for shifting the upper window limit. Moreover, there would be no motivation to provide such a security margin contiguous with the region z.

- The advantage provided by such a region was that, as with the thinking behind the provision of the security barrier discussed in relation to the first auxiliary request, by using a guard band within the low acceptance probability region, there was no need to make a prior analysis of the fraudulent coin distribution. Instead, a quick, simple and effective solution was provided in which both the security margin (USM, LSM) and the security barrier (USB, LSB) were considered to be regions in which coin signals corresponded to problematic coins that should be used to trigger a narrower acceptance range for a subsequent coin. No complex prior analysis of fraudulent coin distributions was required. Moreover, by using the security margin, the switching to the restricted acceptance window (RAW) was performed without having to test whether the coin itself fell within the RAW, thus permitting the security margin to not necessarily be coextensive with the restricted acceptance window.

- Furthermore, the claimed invention was not obvious in view of a combination of Dl and D2. Dl disclosed comparing a coin parameter signal with either a normal channel of width K, corresponding to the normal acceptance window or a narrow channel K' corresponding to the restricted acceptance window. There was no suggestion of using either a security barrier (USB, LSB) outside of and contiguous with the normal acceptance range

or a security margin (USM, LSM) within the low acceptance probability regions. Instead, Dl made a comparison of a coin parameter signal with either the wide or narrow channels K, K' themselves and did not envisage the advantage of defining the security barrier separately. As previously stated, this allowed the security barrier to be defined separately from the restricted access window so that it did not necessarily correspond to the difference between the normal acceptance window and the restricted acceptance window.

VIII. The former opponent argued in writing essentially as follows:

Main request:

- The appellant contested only one feature of the independent claims of the main request, namely whether D2 disclosed a *"restricted acceptance range"*. The challenge was put on two grounds (both considered by the opposition division):
  i) The teaching of D2 was non-enabling.
  ii) The skilled reader would read D3 into D2 and therefore ignore the teaching of D2 itself.

- Both the general and the specific teaching of D2 was to restrict the acceptance range on detection of a potential slug, so as to restrict future acceptance of that slug. The appellant did not challenge that D2 itself, in isolation, disclosed this feature. The only challenge was on the basis that reading D3 would remove this feature. However, D2 was presented as an improvement over D3. It would therefore be bizarre to assume that the reader of D2, the later document, would

forget, delete or overwrite its teaching based on the teaching of an earlier document it improves upon. In the event of conflict, the reader of D2 would have retained the teaching of D2 and reject that of D3. The appellant further stated that D2 was silent about what happened to the lower window limit and inferred that this meant that it moved. However, the appellant misquoted D2 — it was not the *"upper window limit"* which was restricted, but the acceptance window. The upper window limit moved, resulting in a restriction of the window because the lower limit did not.

First auxiliary request:

- The opposition division was correct to point out that, in the absence of any disclosed advantage to the security barrier range which was (a) outside, (b) contiguous with, and (c) substantially aligned with the peak of the distribution of fraudulent money items, claim 1 of the 1st auxiliary request did not involve an inventive step over D2. The objective technical problem over D2 was to find a suitable range for slug detection. The skilled person would therefore find a range that matched the distribution of slugs. If close to the genuine coin window, a contiguous range would inevitably be selected.

- The appellant contended that it was not necessary to measure the actual distribution of slugs. This was misleading. The opposed patent, like D2 and D3, clearly showed and described slug distributions. As the opposition division pointed out, the patent explicitly claimed that the USB was *"substantially aligned with the peak of the*

distribution of fraudulent money items". It would be impossible to provide a mechanism containing a memory defining a USB which was *"substantially aligned with the peak of the distribution of fraudulent money items"* if that distribution had not been measured in advance.

Second auxiliary request:

- The effect of the amendment was to produce a slug region which overlapped the normal acceptance region. This was clearly shown in D2 at Figs 4A and 4B. The skilled person, having measured the slug distribution, would define an appropriate window aligned with the slug distribution as taught in D2. Additionally this feature was disclosed in D1. There was nothing inventive in combining this feature of D1 with the disclosure of D2. The amended claim lacked inventive step having regard to this combination.

- The appellant argued that there was some advantage arising from having the *"security barrier range"* and the *"security margin"* separately *"defined"*. However, the claim did not actually require this. To the contrary, the appellant's drafting combined the two into a newly defined *"predetermined range"*. Given that the claim required the two to be *"contiguous"*, they were for all purposes a single range.

IX. Oral proceedings were held in the absence of the appellant proprietor,as announced in his letter of 24 January 2014.

Reasons for the Decision

1. The appeal is admissible.

2. Main request - Novelty (Article 54 EPC)

2.1 It is common ground that document D2 discloses in the wording of claim 1 (reference signs according to D2 were inserted by the board) (D2, Figures 1, 2 and 14; page 24, line 36 to page 26, line 20, "Sixth Embodiment"):

A money item acceptor for accepting true money items that form part of a distribution of true money items, and rejecting frauds which form part of a distribution of fraudulent money items, comprising:
a signal source (2) to produce a money item parameter signal as a function of a sensed characteristic of a money item,
a store (10) to provide data corresponding to a normal acceptance range (called "acceptance window" in D2) of values of the parameter signal for a money item of a particular denomination, the range including relatively high and low acceptance probability regions wherein the value of a parameter signal corresponds to a relatively high or low probability of an occurrence of sensed money item of said particular denomination,
and a processor (8) to determine when an occurrence of the parameter signal corresponding to a first money item adopts a predetermined value relationship, and in response thereto, to compare the value of a subsequent occurrence of the parameter signal corresponding to a second money item with data corresponding to a **second acceptance range** as compared with the normal acceptance range, and to provide an output corresponding to

acceptability of the second money item if the second occurrence of the parameter signal falls within the second acceptance range,
wherein
said predetermined value relationship occurs when the parameter signal corresponding to the first money item has a value within a predetermined security barrier range (z) outside of the normal acceptance range, which is substantially aligned with the peak of the distribution for the fraudulent money items.

In the above the board has replaced the wording *"restricted acceptance range"* used in claim 1 by *"second acceptance range"*, since the appellant contested that D2 disclosed such a restricted acceptance range.

2.2 According to D2, the acceptance window is set, as shown in Figure 14, to run eg from -3 to +3. Window z, falling centrally within the distribution of known slugs, corresponds to the predetermined security barrier range (USB, LSB) of the present patent and is centred at measurement value +5, extending from +4 to +6. This window is thus located some distance from the edge of the coin acceptance window [-3, +3] (page 25, lines 20-21). If the coin measurement falls within the window z, the acceptance of slugs is reduced by modifying the acceptance window around the valid coin distribution 710, by restricting the upper window limit from +3 to +2 (page 25, lines 32-34). It is thus the slugs which show measurements some distance from the genuine coins which trigger the narrowing of the coin acceptance window (page 25, line 35 to page 26, line 3).

This is further illustrated by the flow diagram of

Figure 15, in which after detecting a coin measurement falling within window z (step 306), the acceptance window is restricted (*"use coin to restrict window"*, step 310) until after the detection of a series of valid coins (step 312) the acceptance window is restored to its original size (step 314).

2.3 The appellant proprietor argued that a skilled person on reading the description in D2 would take into account the disclosure of D3 which was *"incorporated herein by reference"* (D2, page 25, line 16). This would lead the skilled person to consider that the window width was laterally shifted in the manner of D3 rather than being narrowed, since there was no disclosure in D3 of using a restricted acceptance range as compared with the normal acceptance range. Although D2 disclosed restricting the upper limit of the acceptance window from +3 to +2, it was silent about what happened to the lower window's limit.

2.4 The board is not persuaded by this argument, since it considers that *"incorporation by reference"* is intended to complete the disclosure of a document with features that are not specifically disclosed or mentioned, but is not intended to replace the actual disclosure of a document. In particular, D2 specifically discloses *"the upper window limit is **restricted** from +3 to +2"* (page 25, line 33), *"**modifying** the acceptance window around the valid coin distribution"* (ibid, lines 30-31) and *"**narrowing** of the coin acceptance window"* (ibid, line 37). Furthermore in step 310 of the flowchart of Figure 15 it is specified to *"use coin to **restrict** window".* A mere shift of the acceptance window would not be considered by a person skilled in the art to be a restriction, a modification or a narrowing.

Moreover, the context in which document D3 is cited in document D2 is important. On page 25, lines 14-16 it is stated that *"the apparatus ... corresponds to that known from ... EP-A-0480736"*, and on lines 22-23 that *"After performing the coin validation operation as disclosed in ... EP-A-0480736, the process of Figure 15 is carried out on each coin".* It is thus clear to the skilled person that what is incorporated by reference from document D3 are the general constructive features of the apparatus and the coin validation operation, not the reaction to the detection of a slug or how accepting further slugs is to be avoided.

2.5 The appellant proprietor further argued that at the priority dates of D2 and D3 microprocessors were much less powerful than today. Hence the skilled person would not have considered to use acceptance windows with a varying width, since this involved more computing time.

2.6 The board is also not persuaded by this argument, since document D3 has the priority date of October 1990 and D2 that of May 1995. Thus nearly four and half years separate D2 from D3. In that time considerably increase in processing power took place. Hence even if it could be accepted that computing power was a critical issue at the priority date of D3, the situation was not necessarily the same for D2. Moreover, the appellant proprietor has not substantiated why the shifting of the whole window, which involves moving both end points, would consume less computing power than merely shifting one end point, since the measured coin parameter value has to be compared in both cases with the window's end points.

2.7 Hence the board concludes that document D2 discloses a narrowing of the acceptance window from [-3, +3] to [-3, +2] upon detection of a coin measurement falling within window z. The acceptance window is thus changed from a *"normal acceptance range"* to a *"restricted acceptance range"* when the parameter signal corresponding to the first money item has a value within a predetermined security barrier range outside of the normal acceptance range as specified in claim 1 of this request.

2.8 The board finds for these reasons, as did previously the opposition division, that the money item acceptor of claim 1 of the main request is not novel over the disclosure of document D2. Hence the main request is not allowable.

3. 1st auxiliary request - Inventive step (Article 56 EPC) 1973)

3.1 Claim 1 of the 1st auxiliary request was amended with respect to claim 1 as granted to specify:

(a) that the restricted acceptance range was **narrower** than the normal acceptance range, and

(b) a predetermined security barrier range both outside **and contiguous** with the normal acceptance range.

3.2 However, it has been established by the board when discussing the main request that document D2 discloses a restricted acceptance range, ie the range [-3, +2], that is narrower than the normal acceptance range, ie the range [-3, +3]. Hence feature (a) mentioned above

does not distinguish the claimed money acceptor from the one disclosed in D2.

3.3 The appellant proprietor argued in relation to feature (b) that the provision of a security barrier range outside from and contiguous with the normal acceptance range was based on the inventors realizing that coin parameter values lying outside the normal acceptance range were problematic. Thus restricting the acceptance range when coin parameter values were measured within this contiguous security barrier range made a previous determination of a slug distribution unnecessary.

3.4 The appellant's argument, however, contradicts the patent itself, since claim 1 specifies the security barrier range to be *"substantially aligned with the peak of the distribution for the fraudulent money items"*. Hence also the patent requires a predetermination of a slug distribution (cf patent [0029], in particular column 8, lines 27-31).

3.5 Moreover, even if this contradiction would be ignored, the appellant's argument is in substance a reformulation of the technical problem underlying the invention, which thus can be stated as follows: to provide a money item acceptor for accepting true money items and rejecting fraudulent money items without requiring an analysis of the fraudulent money item distribution.

3.6 It is the established case law that a modified version of the technical problem is in principle allowable, but only when the modified technical problem is derivable from the original application documents, ie within the limits of the original description, or if it can be deduced by the skilled person from the application in

the light of the prior art. It should not however alter the character of the invention (Case Law of the Boards of Appeal of the EPO, 7th Ed. 2013, I.D.4.4, "Reformulation of the technical problem").

3.7 According to the patent's description, the upper and lower security barrier *"are disposed above and below the upper and lower window limits w_1, w_2, respectively"* ([0029]). Independent claims 1 and 14 further require that the security barrier range (USB, LSB) *"is substantially aligned with the peak of the distribution for the fraudulent money items"*. Although in Figure 3 the upper (USB) and lower (LSB) security barriers are shown as being contiguous to the normal acceptance window (NAW), no effect that can be attributed to this positioning is disclosed in the description.

3.8 The board considers for these reasons that the modified version of the technical problem addressed by the invention suggested by the appellant proprietor is neither derivable from the original application documents nor can it be deduced from the application when considered in the light of the prior art, since the prior art is silent about any difficulties arising from not knowing the fraudulent money item distribution. Hence the board considers that the technical problem underlying the present invention is to be seen in selecting the position of the security barrier for a given fraudulent money distribution.

3.9 It would be obvious to the skilled person in the art to position the security barrier *"substantially aligned with the peak of the distribution for the fraudulent money items"*, since it is in this region where most signals from fraudulent money items arise. The distribution of slugs which are very similar to true

money items is very close to the true distribution, potentially overlapping it as shown eg in Figure 3. It is thus up to the skilled person to decide the location of the security barrier and it would be obvious when both distributions overlap each other to position it contiguous to the acceptance window.

3.10 The board judges for these reasons that the money item acceptor of claim 1 of the 1st auxiliary request does not involve an inventive step within the meaning of Article 56 EPC 1973. The 1st auxiliary request is thus not allowable.

4. 2nd auxiliary request - Inventive step (Article 56 EPC) 1973)

4.1 Claim 1 of the 2nd auxiliary request differs from claim 1 of the 1st auxiliary request in that the predetermined range triggering the change from the normal acceptance range to the restricted acceptance range comprises a security barrier (USB, LSB) outside and contiguous with the normal acceptance range and a security margin (USM, LSM) contiguous with the security barrier range and in one of the low acceptance probability regions.

4.2 As the former opponent pointed out, although the predetermined range is specified as being formed by the security barrier and the security margin, it is in fact a single range since the security margin is contiguous with the security barrier.

4.3 Document D1 discloses a coin acceptor which switches from using a first normal acceptance window (K) for a true coin, to a second narrower window (K') when a coin parameter signal produced by testing a coin, falls in a region of the normal window for the true coin which

corresponds to a low acceptance probability region for the coin concerned (Figure 1, column 4, lines 21-30; contested patent, [0006]). Hence D1 defines a security margin formed by the parameter region between the two windows K and K', that lies in the low acceptance probability region of the true money items distribution and within the normal acceptance window (K).

4.4 The money item acceptor of claim 1 differs from this conventional acceptor in that the slug detection range is extended beyond the normal acceptance window region to comprise a region substantially aligned with the peak of the slug distribution.

4.5 The skilled person would consider it obvious to restrict the acceptance of money items also for parameter values that lie beyond the normal acceptance region, but in a region of a slug distribution. This measure known from document D2 reduces the acceptance of fraudulent money items. To use a slug detection range lying in part within and in part outside, but contiguous to the normal acceptance region, is a straightforward combination of the disclosures of documents D1 and D2.

4.6 The board judges for these reasons that the money item acceptor of claim 1 of the 2nd auxiliary request does not involve an inventive step within the meaning of Article 56 EPC 1973. The 2nd auxiliary request is thus not allowable.

Order

For these reasons it is decided that:

The appeal is dismissed

The Registrar: The Chairman:

S. Sánchez Chiquero G. Eliasson

Decision electronically authenticated