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Case Number: T 0957/10 - 3.4.03

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Language of the proceedings: EN

Title of invention:
Method and apparatus for document processing

Patent Proprietor:
Cummins-Allison Corp.

Opponents:
Giesecke & Devrient GmbH
DE LA RUE INTERNATIONAL LIMITED

Headword:

Relevant legal provisions:
EPC 1973 Art. 56

Keyword:
Inventive step - (yes)

Decisions cited:

Catchword:

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Case Number: T 0957/10 - 3.4.03

D E C I S I O N
of Technical Board of Appeal 3.4.03
of 21 May 2015

Appellant: (Opponent 2)	DE LA RUE INTERNATIONAL LIMITED DE LA RUE HOUSE JAYS CLOSE, VIABLES BASINGSTOKE, HAMPSHIRE RG22 4BS (GB)
Representative:	Skone James, Robert Edmund Gill Jennings & Every LLP The Broadgate Tower 20 Primrose Street London EC2A 2ES (GB)
Respondent: (Patent Proprietor)	Cummins-Allison Corp. 891, Freehanville Drive Mount Prospect, Illinois 60056 (US)
Representative:	Grünecker Patent- und Rechtsanwälte PartG mbB Leopoldstraße 4 80802 München (DE)
Party as of right: (Opponent 1)	Giesecke & Devrient GmbH Prinzregentenstrasse 159 81677 München (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 5 March 2010 concerning maintenance of the European Patent No. 1227446 in amended form.**

Composition of the Board:

Chairman	G. Eliasson
Members:	V. L. P. Frank
	T. Bokor

Summary of Facts and Submissions

I. This is an appeal by opponent II against the interlocutory decision of the opposition division to maintain the patent EP 1 227 446 as amended during the opposition proceedings (Article 101(3)(a) EPC).

II. A first opposition was filed by opponent I against the patent as a whole on the grounds of lack of inventive step (Articles 100(a) and 56 EPC 1973) and of added subject-matter (Article 100(c) EPC 1973)

A second opposition was filed by opponent II against the patent as a whole on the grounds of lack of novelty and inventive step (Articles 100(a), 54 and 56 EPC 1973).

III. The appellant opponent II requested in writing that the decision under appeal be set aside and the patent be revoked in its entirety.

The respondent proprietor requested in writing that the appeal be dismissed.

Opponent I, party to the proceedings as of right, did not submit any requests or arguments.

IV. All parties declared in writing that they would not attend the oral proceedings. Oral proceedings were held in the absence of the duly summoned parties.

V. The patent claims relevant to the present decision read as follows:

"1. A currency evaluation device for receiving a stack of currency bills and rapidly evaluating all the

bills in the stack, said device comprising:
an input receptacle (12) for receiving a stack of bills to be evaluated;
an output receptacle (2127a-f) *[sic]* for receiving said bills after said bills have been evaluated;
a transport mechanism for transporting said bills, one at a time, from said input receptacle (12) to said output receptacle (217a-f) along a transport path;
a discriminating unit for evaluating said bills, said discriminating unit including a detector positioned along said transport path between said input receptacle (12) and said output receptacle (217a-f), said discriminating unit determining the denomination of said bills and detecting the occurrence of at least one error condition of a plurality of error conditions;
a memory storing information associated with a plurality of modes of operation of the device, said memory being designed to store at least one user-defined mode of operation;
an interface permitting a user of said evaluation device to define said user-defined mode of operation; said interface receiving information from said user specifying how the device is to operate including how said plurality of error conditions are to be handled; said interface being configured to permit said user to define said user-defined mode specifying, for each of said error conditions, whether said evaluation device should suspend operations; said information being stored in said memory;
a mode selection element permitting the user to select one of said modes of operation; and a signal processor causing the transport mechanism to halt in a particular manner or not halt as

defined by said user-defined mode when said user-defined mode has been selected."

"23. A method of operating a currency evaluation device comprising an input receptacle (12) for receiving a stack of bills to be evaluated; an output receptacle for receiving said bills after said bills have been evaluated; a transport mechanism for transporting said bills, one at a time, from said input receptacle (12) to said output receptacle (217a-f) along a transport path; a discriminating unit for determining the denomination of said bills and detecting the occurrence of at least one error condition of a plurality of error conditions; a memory storing information associated with a plurality of modes of operation of the device; an interface permitting a user of said evaluation device to define a user-defined mode of operation; and a mode selection element permitting the user to select one of said modes of operation;

the method comprising:
defining a user-defined mode of operation, the defining comprising receiving information via the interface from a user specifying how the evaluation device is to operate including how said plurality of error conditions are to be handled, wherein the step of defining the user-defined mode of operation comprises the user specifying, for each of said error conditions, whether said evaluation device should suspend operation;
storing the user-defined mode of operation in said memory."

VI. The following documents are cited in this decision:

D1 = WO 96/10800 A

D2 = US 4 787 518 A

E3 = EP 0 706 156 A

E5 = US 4 381 447 A

E6 = US 5 341 408 A

VII. The opposition division found essentially that:

- The feature *"means for generating signals"* used in granted claim 1 was a generalisation of the feature *"signal processor"* disclosed in the application as filed. As in the amended claim 1 the former feature was replaced by the latter the objection of added subject-matter was overcome. The further objection that amended claim 1 did no longer define *"signals to cause the transport mechanism to halt or not halt"* was found not convincing, since it was the means for generating signals/the signal processor that were causing the transport mechanism to halt or not (reasons, point 2).

- Document D1 failed to disclose an interface permitting an user to define for each of the error conditions whether the evaluation device should suspend operation. D1 disclosed that the choice whether to suspend operation upon the presence of an error was preprogrammed and not defined by the user. Hence the device of claim 1 was new (reasons, point 3).

- Document D1 was considered to be the closest prior art. D1 disclosed to adjust some sensitivities of the programmed tests in the discrimination unit. Although D1 disclosed an interface for defining one user-defined mode of operation and implicitly a memory used for storing such information, the user-defined operating mode related only to that the display could be user-defined.
  Document D2 disclosed a currency evaluation device with an interface for defining a user-defined mode of operation and a memory for storing such information, but did not disclose that a user-defined operating mode could be defined with respect to error conditions.
  Document E3 disclosed to stop the transport mechanism when a bill did not correspond to any of the stored patterns. However, it did not disclose to associate different error conditions with user-defined actions. This document was not more relevant in that respect than document D1 (reasons, point 6.3).

- Although it could be assumed that the skilled person knew that the occurrence of an error allowed to take the decision to suspend or halt a transport mechanism of a discriminating unit, none of the documents cited by the opponents disclosed the storing of sets of error conditions associated to user-defined actions as selectable user-defined modes. There was no hint in any document to associate error conditions to halting or not halting the transport mechanism based upon associations provided by a user. In all the documents the user-defined operations were based upon bill denominations. Thus the combination of D1/D2 would lead to a device with one user-defined

mode, where a user could assign output bins to different denominations and a fit/unfit status, where a user defined table held in memory stored rules associating output bins to denomination/ status pairs. Hence the device of claim 1 and the method of claim 23 involved an inventive step (reasons, point 6.4).

VIII. The appellant opponent II argued essentially as follows:

- Claim construction: Claim 1 referred to *"error conditions"*. These did not however relate to an error of the currency evaluation device in a strict sense, ie a mechanical or electrical error, instead they related to conditions in which a predetermined criterion is not met and should be interpreted as such. Additionally, the expression *"whether said evaluation device should suspend operation"* should be interpreted as whether the device should directly or indirectly suspend, halt and/or stop operation.

- Document D1 was the closest prior art. The device of claim 1 differed from the device disclosed by D1 by:
  a specific user-defined mode that might be configured to turn on and off the suspension of the device for two (or more) error conditions; and in that
  the operation of the signal processor was defined by said particular user-defined mode when said user-defined mode had been selected.

  Based on the above differences the technical problem could be stated as: how to implement a

currency processing device having a discriminator which may or may not suspend operation when faced with two or more error conditions.

- Faced with the above problem, the skilled person would have looked for examples that allowed for certain operations of the currency processing device to be turned off and on. The embodiment of pages 65-66 of D1 disclosed that additional user-defined modes of operation were possible, wherein the user could turn on and off operations of the device using an interface. Moreover the failure of a bill to pass the authentication tests disclosed in this embodiment were error conditions. Thus D1 disclosed that the way in which error conditions were handled could be defined in a user-defined mode of operation. In conclusion, when faced with the previously defined technical problem the skilled person would be naturally led to the embodiment of pages 65-66 of D1. Knowing that the device might or might not suspend operation on an error condition and that Table 1 showed tests that might or might not occur to indicate an error condition, the skilled person would adapt the user-defined modes of Table 1 to provide the functionality described in relation to the "fake" and "no call bill" modes of page 34 and hence solve the problem. This would require no hardware modifications. Hence the device of claim 1 was obvious to the skilled person having regard to the full disclosure of D1.

- Documents E5 and E6 showed that programable user-defined modes of operations relating to error conditions were known. These teachings together with the disclosure of D1 rendered the device of

claim 1 obvious. An alternative technical problem could be formulated as how to more efficiently provide variations of a currency processing device; the variations comprising a mode that suspends operation on an error condition and a mode that does not suspend operation on an error condition.

Document E5 described a document handling apparatus in which a user could set a mode of operation wherein, if user-defined conditions were met, the apparatus would temporarily stop operation. The number of "fit sheets" and "unfit sheets" required for the apparatus to temporarily stop operation was set by a user using a control panel. The combination of user-entered count totals for each condition was effectively a user-defined mode of operation.

Document E6 showed that faced with the problem of providing variations of currency processing device, the skilled person knew to make the device configurable and to store parameters relating to the configuration in memory. E6 furthermore described how settings could be saved in tables and how the user could program parameters in these tables. This, together with the hint to store error detection setting and any adjusted parameters for optimum operation, showed that the skilled person faced with the problem of providing variations of currency processing device and the disclosure of page 34 of D1 would make any parameters user-definable and part of a user-definable mode.

IX. The respondent proprietor argued essentially as follows:

- Document D1 was the closest prior art and disclosed a device having a number of predefined operating modes including a fixed mode, a stranger mode, a sort mode, a face mode and a forward/ reverse orientation mode.

- According to claim 1 the memory was designed to store at least one user-defined mode of operation and the device comprised a mode selection element permitting the user to select one of said modes of operation, including the user-defined mode(s). Thus the user-defined mode of operation was actually a mode stored in the memory which was distinct from combining two modes of operation stored in the memory. Claim 1 further required that said interface was configured to permit said user to define said user-defined mode specifying, for each of said error conditions, whether said evaluation device should suspend operation. Claim 23 contained similar language. Hence the wording of the independent claims did not give any room for an interpretation of the term *"user-defined mode of operation"* which would lead to a combination of different manufacturer preset modes being regarded as a new user-defined mode of operation. Each of these manufacturer preset modes could be switched on or off which meant that an error condition would be determined or not. If the manufacturer preset modes were switched on then only a manufacturer preset action upon occurrence of an error condition was made giving the operator no option to influence this in a user-defined way. Although the user-defined mode might have some

presettings, claims 1 and 23 afforded that for each of the error conditions it was specified whether said evaluation device should suspend or not suspend operation.

- The device of D1 did not disclose:
  i) an interface permitting a user of said evaluation device to define said user-defined mode of operation; (...) said interface being configured to permit said user to define said user-defined mode specifying for each of said error conditions, whether said evaluation device should suspend operation; and that
  ii) the user-defined mode of operation was selectable by a mode selection element.

- The disadvantage of the device according to D1 was that the user was limited to the factory defined modes of operation with regard to the handling of error conditions. The object of the present invention was therefore to provide a method and apparatus for currency evaluation which was seen by the operator as being more flexible to use with regard to the handling of error conditions. The more specific technical problems formulated by the appellant had to be refused because they contained a suggestion of the invention and thus pointed to the solution.

- The embodiment on page 65-66 of D1 referred to some presettings with regard to specific tests, eg "UV test", "fluorescent test" and "magnetic test". D1 did not disclose that these presettings were interrelated with a user-defined operation involving the suspension of the device or not

based on the specific test result. Page 34 of D1 did not disclose how the described functionalities were achieved and whether they were present in one and the same discriminator or in distinct devices. Simply turning the tests on or off (as shown in table 1 of D1) led only to the number of error conditions a discriminator could determine. Whether a turned on test led to a suspension of the device was not part of the disclosure referred to by the appellant because the disclosure focused only on the sensitivities of such tests.

- The appellant referred to figure 11 and lines 9-38 of column 43 of E5 where the possibility of entering the number representing a desired batch count for fit and for unfit sheets was disclosed. This disclosure was all about forming batches of specific numbers of sheets. Although a batch for unfit documents was also defined, there existed no interrelation that the halting of the apparatus was affected on the basis of the error condition itself. This batch number input effected the overall operation of the device and not only one single user-defined mode which was only one of the plurality of modes of operation of the device.

- Document E6 referred to the saving of error detection settings, this meant that the detection features would be active or not when the device was turned on. This also implied that these settings would be used for the overall operation of the device. The term "error detection settings" did not involve anything with regard to the suspension of the transport mechanism because the suspension was an action which was based on the result of the prior error detection and was not

part of it. Document E6 did not teach anything with regard to the combination of error conditions and the halting or not halting of the device based on user presettings for specific user-defined modes which were stored in the memory beside other modes of operation. In light of the disclosure of the patent and as a minimum requirement, a user-defined mode of operation was only user-defined if it included the ability for each of said error conditions to decide whether said evaluation device should suspend operation.

Reasons for the Decision

1. The appeal is admissible.

2. Inventive step - Article 56 EPC 1973

2.1 The only issue in this appeal is that of inventive step.

2.2 It is common ground that document D1 represents the closest prior art. It is also undisputed that D1 discloses in the wording of claim 1 (references according to D1 were inserted by the board) (see D1, page 15, line 15 - page 16, line 9; page 17, lines 28-31; page 36, line 15 - page 37, line 19; page 44, lines 10 - 28; page 47, lines 28-32; Figures 1 and 2):

A currency evaluation device for receiving a stack of currency bills and rapidly evaluating all the bills in the stack, said device comprising:

- an input receptacle (12, 209) for receiving a stack of bills to be evaluated;
- an output receptacle (20, 217) for receiving said bills after said bills have been evaluated;
- a transport mechanism (16) for transporting said bills, one at a time, from said input receptacle to said output receptacle along a transport path;
- a discriminating unit (14) for evaluating said bills, said discriminating unit including a detector (18a, 18b) positioned along said transport path between said input receptacle and said output receptacle, said discriminating unit determining the denomination of said bills and detecting the occurrence of at least one error condition of a plurality of error conditions;
- a memory (34) storing information associated with a plurality of modes of operation of the device, said memory being designed to store at least one user-defined mode of operation;
- an interface (61) permitting a user of said evaluation device to define said user-defined mode of operation;
- a mode selection element permitting the user to select one of said modes of operation, and
- and a signal processor (30) causing the transport mechanism to halt in a particular manner or not halt.

In D1 the user-defined mode of operation relates to the order in which bill denominations are suggested to an operator for acceptance or rejection (page 47, lines 28-32; Figures 23 and 24). The user-defined mode is not related to whether the device suspends operation under the occurrence of an error condition.

2.3 The currency evaluation device of claim 1 thus differs from the one disclosed in document D1 by:

(a) said interface receiving information from said user specifying how the device is to operate including how said plurality of error conditions are to be handled; said interface being configured to permit said user to define a user-defined mode specifying, for each of said error conditions, whether said evaluation device should suspend operations; said information being stored in said memory; and by

(b) said signal processor causing the transport mechanism to halt in a particular manner or not halt as defined by said user-defined mode when said user-defined mode has been selected.

2.4 These features allow an user to specify a user-defined mode of operation handling error conditions, store it in memory and select it from between the modes of operation of the device whenever the device is used.

The board considers therefore that the technical problem solved by the invention is the one stated in the patent, namely to provide a method and apparatus for currency evaluation which is more flexible to use by the operator ([0005]), since in the conventional device the user was limited to selecting one of the predefined modes of operation or at the most combining them together.

2.5 In his submissions, the appellant opponent II suggested two alternative technical problems, namely:

(a) how to implement a currency processing device having a discriminator which may or may not suspend operation when faced with two or more error conditions, or

(b) how to more efficiently provide variations of a currency processing device; the variations comprising a mode that suspends operation on an error condition and a mode that does not suspend operation on an error condition.

2.6 It is the established practice of the Boards of Appeal that an objective definition of the technical problem should normally start from the problem mentioned in the patent. It may be necessary to investigate which other problem objectively existed (a) if the problem mentioned in the patent was not solved or (b) if inappropriate prior art were used to define it (see Case Law of the Boards of Appeal, 7th edition 2013, I.D.4.3.2).

2.7 These conditions are not fulfilled in the present circumstances, since:

- The presently claimed device and method provides more flexibility of use by the operator. Thus the problem mentioned in the patent in [0005], namely to achieve more flexibility, is solved. Condition (a) is not fulfilled.

- Document D1 has been cited in the patent as relevant prior art ([0003]) and is a realistic starting point for assessing inventive step, defining thus the objective technical problem. Condition (b) is also not fulfilled.

2.8 The board sees for these reasons no need to redefine the technical problem underlying the present invention and considers, in particular, that the technical problems suggested by the appellant opponent II are based on hindsight as they contain pointers to the solution, namely that the discriminator should suspend operation or not under the occurrence of error conditions.

2.9 The appellant opponent II argued that the device of claim 1 was obvious having regard to the whole disclosure of document D1. To show this, he relied on the embodiment of D1 disclosing a discriminator with an UV test, a fluorescent test and a magnetic test, whereby the sensitivities of these tests might be adjusted from 1-7 or individually turned off (D1, page 65, line 27 - page 66, line 20; Table 1) and further referred to the disclosure of D1 that when the discriminating unit determined that a bill was a fake, the flagged bill was routed to a separate output receptacle and *"the operation of the discriminator may or may not then be suspended"* (D1, page 34, lines 1-4). The *"Suspect"* mode was a mode in which one or more authentication tests were performed on the bills of the stack, ie the tests disclosed in Table 1. This mode could additionally be combined with other modes of operation, eg the *"Stranger"* mode, allowing for a plurality of error conditions to arise. Hence the two disclosures of D1 were complementary and in combination they suggested that the user might select aspects of the mode relating to turning functionality on and off, ie be user-defined.

2.10 The board considers that the passage of the embodiment of document D1 referred to by the appellant opponent II merely discloses the obvious fact that in case of an

error condition the discriminator may suspend operation or not (page 34, lines 1-4). This is a choice the skilled person always has when designing a currency evaluation device. It is however not clear form the disclosure of D1 whether the option of suspending or not operation is suggested to be a user-defined choice or whether it is predefined for each kind of discriminator, ie that some types of currency evaluation devices suspend operation under a specific error condition while other devices do not.

The other embodiment of D1 on pages 65-66 relied on by the appellant discloses that the user may define which tests are carried out on the stack of bills as well as their sensitivities, but does not disclose that these settings have any effect on the discriminator stopping or not when detecting an error condition. It will do so or not whenever the error condition is detected, irrespective on the sensitivity of the test. On the other hand, if the test is switched off then the corresponding error condition will not occur and the discriminator will not stop.

Thus the board considers that D1 alone does not lead the skilled person to design a currency evaluation device with a user-defined mode specifying how the device is to operate under occurrence of error conditions, ie how said plurality of error conditions are to be handled, and permitting the user to define an user-defined mode specifying, for each of said error conditions, whether said evaluation device should suspend operation or not. Such a user-defined mode of operation is not suggested by D1 even when combining different parts of its disclosure.

2.11 The appellant opponent II also argued that the currency evaluation device of claim 1 was obvious over a combination of D1 and the common general knowledge illustrated by documents E5 and E6. His arguments are based on the reformulated technical problem mentioned above under point 2.5(b) which was not accepted by the board, since it contains pointers to the solution of the problem. Thus the objective technical problem addressed by the skilled person has to be seen in providing a method and apparatus for currency evaluation which is more flexible to use by the operator than the one known from document D1.

2.12 Irrespective of the fact that documents E5 and E6 are patent documents and thus, according to the established practice of the Boards of Appeal, not suitable to demonstrate the common general knowledge of the skilled person, the board is not persuaded by the arguments of the appellant opponent II for the following reasons.

2.13 Document E5 discloses a currency evaluation apparatus which allows to process sheets in batches. It may separate the sheets into two stacks, namely *"fit"* and *"unfit"* bills, having a predetermined number of sheets in each stack. The desired batch amount may be selected by thumb wheel switches so that the apparatus temporarily stops operation when the desired number of sheets stacked has been reached (E5, column 43, lines 9-43; Figure 11).

However, as correctly pointed out by the respondent proprietor, stopping the operation of the apparatus is not related to an error condition, but on reaching a predetermined target, namely the number of preselected bills in one of the stacks. E5 does not disclose that the user may select whether the apparatus suspends

operation or not on the occurrence of an error condition, which in this case would be the detection of an *"unfit"* bill. If such error condition arises the apparatus continues counting, ie does not stop, until the predetermined number of bills in one stack is reached. Hence document E5 is not apt to suggest to the skilled person to modify the device of D1 in the way specified in claim 1 of the contested patent.

2.14 Document E6 discloses a currency counter in which non-volatile parameters of the counter are stored in a non-volatile memory such as an EEPROM. Accordingly the user may preset values for the operation of the counter, eg "Batch Settings", "Value Mode Denominations" or "Speed Settings", and to choose the active detection features when the counter is turned on (E6, column 7, line 30 - column 8, line 49). Although E6 discloses that *"error detection settings"* are saved to non-volatile memory (column 7, line 36), these settings do not relate to whether the counter suspends operation or not when an error condition occurs, but to which detection features are active when the counter is turned on. This disclosure corresponds to the embodiment of D1 on pages 65-66 in which the user predefines which tests (UV, fluorescent or magnetic) are to be carried out.

Hence the board considers that document E6 does not suggest to the skilled person to modify the currency evaluation device of D1 so that it comprises a user-defined mode which determines whether the device suspends operation based on user presettings for different error conditions.

2.15 Although it can be accepted that the skilled person knows, *inter* alia from documents D1, E5 and E6, that he can store in the memory of a currency evaluation device

some user-defined values, this is not the point in question. The key issue is whether the skilled person would have been induced to devise and store in memory a user-defined mode of operation which specifies the operation of the discriminator, suspending its operation or not under occurrence of a plurality of error conditions. The board has not seen any evidence pointing in this direction.

Consequently neither document D1 alone or taken in combination with documents E5 or E6 suggests to the skilled person to modify the device of D1 so that it comprises such a user-defined mode of operation.

2.16 The board finds for these reasons that the currency evaluation device of claim 1 involves an inventive step within the meaning of Article 56 EPC 1973.

2.17 As the method of operating a currency evaluation device of claim 23 also specifies a user-defined mode of operation in which the user specifies for each of the possible error conditions whether the evaluation device should suspend operation or not, it involves an inventive step for the same reasons as found in relation to claim 1.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

S. Sánchez Chiquero G. Eliasson

Decision electronically authenticated