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D E C I S I O N
of 20 November 2001

Case Number: T 0383/98 - 3.2.5

Application Number: 91302905.4

Publication Number: 0450929

IPC: B41J 25/24

Language of the proceedings: EN

Title of invention:
Image outputting apparatus

Patentee:
CANON KABUSHIKI KAISHA

Opponent:
Océ-Nederland B.V.

Headword:
-

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

Keyword:
"Addition of subject-matter (main, first and second auxiliary requests, yes)"
"Inventive step (third auxiliary request, no)"

Decisions cited:
-

Catchword:
-



Case Number: T 0383/98 - 3.2.5

D E C I S I O N
of the Technical Board of Appeal 3.2.5
of 20 November 2001

Appellant: CANON KABUSHIKI KAISHA
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 17 February 1998
revoking European patent No. 0 450 929 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: W. Moser
Members: P. E. Michel
W. Zellhuber

Summary of Facts and Submissions

- I. The appellant (patentee) lodged an appeal against the decision of the Opposition Division revoking patent No. 0 450 929.

Opposition had been filed against the patent as a whole based on Article 100(c) EPC (insufficiency of disclosure) and Article 100(a) EPC (lack of inventive step).

The Opposition Division held that the subject-matter of claims 1 and 8 of each of the requests of the appellant lacked an inventive step.

- II. Oral proceedings were held before the Board of Appeal on 20 November 2001.

- (i) The appellant requested that the decision under appeal be set aside and the patent be maintained on the basis of the following documents:

(a) main request: claims 1 to 14 submitted as main request during oral proceedings; or

(b) first auxiliary request: claims 1 to 14 submitted as first auxiliary request during oral proceedings; or

(c) second auxiliary request: claims 1 to 14 submitted as second auxiliary request on 12 November 2001; or

(d) third auxiliary request: claims 1 to 12 submitted as third auxiliary request during

oral proceedings.

(ii) The respondent (opponent) requested that the appeal be dismissed.

III. Claims 1 and 8 of the main request of the appellant read as follows:

"1. A printing apparatus for connecting to a host computer (28), the printing apparatus comprising a printer control means (2) and a large capacity non-volatile memory (2b) which is external to the printer control means (2), the printer control means comprising:

(a) input means (21, 22) for receiving data from the host computer (28);

(b) a random access memory (31);

(c) a first storage control means (23) responsive to an external selection signal for loading a selected one of a plurality of emulation programs from the large capacity non-volatile memory (2b) into said random access memory (31) when said plurality of emulation programs are stored in said large capacity non-volatile memory (2b);

and

(d) output means for generating and outputting output data from the received data using the emulation program loaded into said random access memory (31);

characterised in that the apparatus further comprises means for adding emulation programs to said large capacity non-volatile memory (2b) comprising:

(i) connection means (2a) for connecting at least one of a variety of removable small capacity external memory means (29) to the printer control means (2) and for receiving an emulation program stored on the

removable small capacity external memory means (29) ;
and

(ii) second storage control means (23) for copying and registering the emulation program received at said connection means from said small capacity external memory means (29) in the large capacity non-volatile memory (2b)."

"8. A method for generating a printed output from input data received by a printing apparatus from a host computer (28), the method comprising the steps of:

copying and registering an emulation program stored in a removable small capacity external memory means (29) mounted on a printer control means (2) via a connection means (2a), to a large capacity non-volatile memory (2b) having one or more other emulation programs previously stored therein;

loading a selected one of the emulation programs stored in the large capacity non-volatile memory (2b) into a random access memory (31) in response to an external selection signal;
generating output data from the input data using the emulation program loaded into said random access memory (31); and

printing an image corresponding to the generated output data."

Whilst otherwise differently worded, claims 1 and 8 of the first and second auxiliary requests of the appellant also include the term "a large capacity non-volatile memory".

Claims 1 and 7 of the third auxiliary request of the appellant differ from claims 1 and 8 of the main request in that the term "large capacity non-volatile

memory" is replaced by the term "hard disc".

IV. The following documents have been referred to in the appeal procedure:

E1: GB-A-2182471

E2: US-A-4860119

E3: JP-A-63216125

D1: US-A-4742483

V. In the written and oral procedure, the appellant argued essentially as follows:

The disclosure of the application as filed provides a basis for the term "non-volatile" as used in the expression "a large capacity non-volatile memory". According to the application as filed, the problem to be solved is to avoid emulation programs stored in a RAM (random access memory) being lost each time the printer is switched off. It is thus clear to the person skilled in the art that the reference to "a hard disk or the like" at column 2, line 7 of the application as published must refer to a large capacity non-volatile memory. In addition, a RAM would accept only one emulation program at a time. The main request and the first and second auxiliary requests thus satisfy the requirements of Article 123(2) EPC.

Document E3 represents the closest prior art, since it solves the same problem as the patent in suit, that is, to avoid the problems associated with changing an emulator program. The solution disclosed in document E3

is to store all the required emulator programs on a hard disk in advance. It was deliberately made impossible to add new emulator programs.

Nothing in the prior art suggests an arrangement for copying emulation programs directly to a hard disk. The object of the invention can thus be regarded as being to provide a new use of an existing cartridge slot.

Document E2 only discloses the downloading of a single emulator program from an IC card to a RAM. Although at column 16, lines 47 to 50, reference is made to "softwares", this merely refers to a single program, as is made clear by the reference to the "softwares" being loaded to the RAM "when required". Only one program is required at any one time. Although a non-volatile memory is present in the form of a ROM (read only memory) (132), emulator programs are nevertheless downloaded to the RAM (133).

Document D1 discloses a printer in which a maintenance program may be downloaded to a RAM. These programs are not stored and must always be reloaded when again required.

Document E1 discloses a printer in which fonts may be downloaded from a cartridge to a RAM. Whilst the passage at page 2, line 124 to page 3, line 3 indicates that more than one character pattern set may be stored, this is only feasible for fonts and not emulator programs which require more storage capacity. Whilst battery supported and hence non-volatile RAM is known, this is exceptional. In the absence of any indication that such a non-volatile RAM is used, it must be assumed that the RAM is volatile.

The present invention is concerned with printers and the use of any knowledge from the field of personal computers is regarded as hindsight.

The subject-matter of claim 1 of the third auxiliary request thus involves an inventive step. The subject-matter of claim 7 of the third auxiliary request involves an inventive step for the same reasons.

VI. In the written and oral procedure, the respondent argued essentially as follows:

According to the application as filed, the problem to be solved is, as stated at column 1, lines 54 to 57 of the application as published, to avoid the necessity "to buy a plurality of such cartridge type memory mediums and mount a cartridge type memory medium corresponding to each emulation mode each time." This problem is solved by the use of a large capacity memory capable of storing several programs. It is not essential for the memory to be in addition non-volatile. A RAM could store a number of emulation programs, of which only one would be in use at a given time. The main request and the first and second auxiliary requests thus do not satisfy the requirements of Article 123(2) EPC.

There are no objections under Article 123(2) EPC or of lack of novelty regarding the claims of the third auxiliary request.

It is agreed that document E3 represents the closest prior art. A problem associated with this printer is that, whilst new printers are constantly being developed, necessitating the use of new emulator

programs, it is not possible to load such new emulator programs. The solution to this problem is well known in computer technology, that is, to allow programs from a small capacity memory, such as a floppy disk or cartridge, to be downloaded to the hard disk.

The question of whether the memory to which the program is downloaded is volatile or non-volatile is not relevant. It is merely necessary for the memory to have a sufficient capacity to store a number of emulation programs.

The subject-matter of claims 1 and 7 of the third auxiliary request thus does not involve an inventive step.

Reasons for the Decision

Main request and first and second auxiliary requests

1. *Amendments*

1.1 Claim 1 of the main request and claim 1 of the first and second auxiliary requests each specifies the presence of "a large capacity non-volatile memory (2b) which is external to the printer control means (2)".

1.2 In the application as filed, the term "non-volatile" is nowhere used. Referring to the published version of the application, the paragraph at column 2, lines 3 to 15, forming part of the summary of the invention, refers to "a hard disk or the like". The passage at column 3, lines 24 to 28, refers to "a large capacity auxiliary memory device".

- 1.3 It was argued on behalf of the appellant that the reference to "a hard disk or the like" in the summary of the invention implies a non-volatile memory in view of the necessity of solving the problem stated at column 1, lines 54 to 57, according to which, "... it has been necessary to buy a plurality of such cartridge type memory mediums and mount a cartridge type memory medium corresponding to each emulation mode each time." However, in the opinion of the Board, this problem is solved by the large capacity of the memory, which is capable of storing a number of emulation modes.
- 1.4 The question of whether the large capacity memory is volatile or non-volatile is not relevant to the solution to the stated problem. This is confirmed by the passage in the published version of the application at column 2, lines 16 to 24, of the summary of the invention, which states "In the present invention, by the emulation program being copied and registered on auxiliary memory means, it becomes possible to dismount the copied and registered emulation program cartridge and further, it also becomes possible to copy and register a second emulation cartridge in the same manner. Thereby, the user is liberated from the cumbersomeness with which the cartridge is interchanged during the changeover of the emulation program mode." Thus, the reference to "a hard disk or the like" is not seen as adding anything to the disclosure of "a large capacity auxiliary memory device", which may be volatile or non-volatile.
- 1.5 The main request and the first and second auxiliary requests thus do not comply with the requirements of Article 123(2) EPC.

Third auxiliary request

2. *Amendments*

In place of the expression "a large capacity non-volatile memory", the term "a hard disc" is used. This term is disclosed in the application as filed in the passage referred to above in paragraph 1.2.

3. *Novelty*

3.1 The only cited document showing the presence of a hard disk in a printing apparatus is document E3. The apparatus does not, however, disclose means for adding emulation programs to the hard disk.

4. *Inventive step*

4.1 The closest prior art is represented by document E3. This document discloses a printing apparatus having all the features of the preamble of claim 1, including a hard disk upon which a plurality of emulation programs are stored. As stated in the preceding paragraph, the apparatus does not disclose means for adding emulation programs to the hard disk.

4.2 A problem thus arises when it is desired to emulate a printer other than one of those stored on the hard disk, for example, a newly developed printer. The objective problem can thus be stated as being to enable the emulation of a printer for which an emulation program is not stored on the hard disk.

Although it was suggested on behalf of the appellant that the object of the invention can be regarded as

being to provide a new use of an existing cartridge slot, document E3 does not disclose the presence of such a slot, and it cannot be assumed that such a slot would inevitably be provided.

4.3 According to claim 1, this problem is solved by

"means for adding emulation programs to said hard disc (2b) comprising:

(i) connection means (2a) for connecting at least one of a variety of removable small capacity external memory means (29) to the printer control means (2) and for receiving an emulation program stored on the removable small capacity external memory means (29); and

(ii) second storage control means (23) for copying and registering the emulation program received at said connection means from said small capacity external memory means (29) in the hard disc (2b)."

4.4 This solution is, however, available to the person skilled in the art who is aware of the disclosure of document E2. As shown most clearly in the description relating to Figure 12 at column 16, lines 47 to 52, standard printer software is stored in a ROM (132). Additional printer software is stored in an IC card (14) (a removable small capacity external memory means) which is connected to an IC card interface (136) (connection means) and loaded to a RAM (133) as required.

4.5 It was argued on behalf of the appellant that this teaching would lead the person skilled in the art to copy any additional emulation programs to the RAM of document E3 and not to the hard disk. This cannot be

accepted. Document E3 teaches a solution to the problem of facilitating a change in the printer to be emulated. In order to achieve this, a number of emulation programs are stored on a hard disk. When the user wishes to emulate a particular printer, a selection is made by means of a console display device (13), and the corresponding program is loaded to the memory (12). As explained in the patent in suit at column 5, lines 24 to 30, this is necessary, since a hard disk is too slow to supply the necessary emulation data to the CPU during printing. Thus, any emulator programs which are to be used by the printing apparatus must be available on the hard disk for downloading to the memory which includes a RAM and is in the position to instruct the CPU as required.

4.6 It would not occur to the person skilled in the art to supply new emulator programs direct to the RAM, which would subsequently be lost when the printer was switched off, since this would defeat the intention to make it possible to keep the printer up to date with emulator programs corresponding not only to printers available at the time at which the printer was sold, but also with any printers developed after the sale of the printer for which desirable software became available. In other words, it would be the obvious course of action to store any new emulator programs in the same memory as the existing emulator programs. That is, on the hard disk.

4.7 The subject-matter of claim 1 of the third auxiliary request thus does not involve an inventive step.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

M. Dainese

W. Moser