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D E C I S I O N
of 31 July 2002

Case Number: T 0248/99 - 3.4.2

Application Number: 93110045.7

Publication Number: 0565137

IPC: G03G 15/00

Language of the proceedings: EN

Title of invention:

Page printer

Patentee:

SEIKO EPSON CORPORATION

Opponent:

Canon Kabushiki Kaisha

Headword:

-

Relevant legal provisions:

EPC Art. 56

Keyword:

"Main, first to fifth auxiliary requests - inventive step
(no)"

Decisions cited:

-

Catchword:

-



Case Number: T 0248/99 - 3.4.2

D E C I S I O N
of the Technical Board of Appeal 3.4.2
of 31 July 2002

Appellant: Canon Kabushiki Kaisha
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Decision under appeal: Interlocutory decision of the Opposition Division
of the European Patent Office posted 5 January
1999 concerning maintenance of European patent
No. 0 565 137 in amended form.

Composition of the Board:

Chairman: E. Turrini
Members: M. A. Rayner
V. Di Cerbo

Summary of Facts and Submissions

I. The present appeals are against the decision of the opposition division in respect of European patent number 565 137 (application number 93 110 045.7). The patent concerns a page printer and in the proceedings before the first instance reference was made inter alia to the following documents:

D1: EP-A-240 337

D8: JP-U-61 158984 (with English translation)

D10: JP-U-59 71351 (with English translation)

The opposition division found that the patent as amended according to an auxiliary request before it met the requirements of the Convention, higher order requests not being allowable. Both the patentee and the opponent appealed against this decision. In its decision, the opposition division identified a lateral sideplate formed from an electrically conductive material as being implicitly disclosed in Figure 1 of document D10 in view of fitting section 8. It also observed that the various units and rollers known from document D1 are not assembled on a side plate of electrically conductive material which separates the printing mechanism and the electronic circuit portion from each other.

II. In the appeal proceedings, oral proceedings were requested on an auxiliary basis by both parties and were appointed consequent to these requests.

III. The case of the patentee can be summarised as follows:

Requests

The patentee requests setting aside of the decision of the opposition division and maintenance of the patent in amended form based on a main request (claims as granted) or on auxiliary requests 1 to 4 filed with the letter of 15 May 1999 or auxiliary request 5 filed with the letter of 1 July 2002.

The independent claims upon which the respective requests are based have the following wording:

Main Request

1. A page printer, comprising: a housing (1) having a front side, a rear side, first and second lateral sides and a lateral side plate (5), said lateral side plate being formed from an electrically conductive material; a gate roller (17), a developing unit (30), a photosensitive drum unit (18), a fixing unit (44), and paper discharging rollers which are mounted in the housing and oriented to provide a paper path; said gate roller (17) is mounted in a space at the front side of the housing (1); a controlling electronic circuit (13) housed in said housing (1) at a lateral side portion (9) thereof, said lateral side plate (5) being disposed between said circuit (13) and said units; whereby the lateral side adjacent to said lateral side plate (5) is constructed such that upon movement of a movable member (8,71,72) the controlling electronic circuit (13) is accessible during operation of the page printer.

Claim 2 differs from claim 1 in that the feature

"said gate roller (17) is mounted in a space at the front side of the housing (1);"

is replaced by the feature

"said paper discharging roller is mounted in a space at the front side of the housing (1);"

3. A page printer, comprising:
a housing (1) having a front side, a rear side, first and second lateral sides, and a lateral side plate (5), said lateral side plate being formed from an electrically conductive material;
a gate roller (17), a developing unit (30), a photosensitive drum unit (18), a fixing unit (44), and a paper discharging roller (2) assembled on the side plate (5) of said housing in that order; and
a controlling electronic circuit means (13) which is housed at a lateral side portion (9) of the housing (1) such that the printing mechanism and the electronic control circuit portion are separated from each other by means of the lateral side plate (5)."

First Auxiliary Request

Independent claims 1 and 2 correspond to those of the main request. Claim 3 corresponds with that of the main request except in that the last feature thereof is replaced by the following wording:

"a controlling electronic circuit means (13) which is housed in said housing (1) at a lateral side portion thereof, such that the printing mechanism and the electronic control circuit portion are separated from each other by means of the lateral side plate (5)."

Second Auxiliary Request (version accepted by the opposition division)

Sole independent claim 1 of this request corresponds to claim 3 of the first auxiliary request.

Third Auxiliary Request

1. A page printer, comprising:
a housing (1) having a front side, a rear side, first and second lateral sides and a lateral side plate (5), said lateral side plate being formed from an electrically conductive material;
a gate roller (17), a developing unit (30), a photosensitive drum unit (18), a fixing unit (44), and a paper discharging roller (2) assembled on the side plate (5) of said housing in that order; and
a controlling electronic circuit means (13) which is housed in said housing (1) at a lateral side portion thereof, such that the printing mechanism and the electronic control circuit portion are separated from each other by means of the lateral side plate (5);
whereby said lateral side portion (9) adjacent said side plate (5) is constructed such that upon movement of a movable member (8,71,72) the controlling electronic circuit (13) is accessible during operation of the page printer.

Fourth Auxiliary Request

1. A page printer, comprising:
 - a housing (1) having a front side, a rear side, first and second lateral sides and a lateral side plate (5), said lateral side plate being formed from an electrically conductive material;
 - a gate roller (17), a developing unit (30), a photosensitive drum unit (18), a fixing unit (44), and paper discharging rollers which are mounted in the housing and oriented to provide a paper path;
 - said gate roller (17) is mounted in a space at the front side of the housing (1);
 - a lateral side portion (9) formed on a lateral side of the housing (1), said lateral side portion (9) is separated from said units and said rollers by means of said side plate (5) and a side wall (1a) of the housing;
 - a controlling electronic circuit (13) housed in said lateral side portion (9);

whereby said lateral side portion (9) is defined adjacent to said side wall (1a) and is constructed such that upon movement of a movable member (8,71,72) the controlling electronic circuit (13) is accessible during operation of the page printer.

Claim 2 differs from claim 1 in that the feature

"said gate roller (17) is mounted in a space at the front side of the housing (1);"

is replaced by the feature

"said paper discharging roller (2) is mounted in a

space at the front side of the housing (1);"

3. A page printer, comprising:
 - a housing (1) having a front side, a rear side, first and second lateral sides, and a lateral side plate (5), said lateral side plate being formed from an electrically conductive material;
 - a gate roller (17), a developing unit (30), a photosensitive drum unit (18), a fixing unit (44), and a paper discharging roller (2) assembled on the side plate (5) of said housing in that order;
 - a lateral side portion (9) formed on a lateral side of the housing (1), said lateral side portion (9) is separated from said units and said rollers by means of said side plate (5) and a side wall (1a) of the housing;
 - a controlling electronic circuit (13) housed in said lateral side portion (9).

Fifth Auxiliary Request

1. A page printer, comprising:
 - a housing (1) having a front side, a rear side, first and second lateral sides, and a lateral side plate (5), said lateral side plate being formed from an electrically conductive material;
 - a gate roller (17), a developing unit (30), a photosensitive drum unit (18), a fixing unit (44), and a paper discharging roller (2) assembled on the side plate (5) of said housing in that order;
 - a light writing unit (40) in the housing (1) at its rear side;
 - and a controlling electronic circuit means (13) which is housed in said housing (1) at a lateral side portion thereof, such that the printing mechanism and the

electronic control circuit portion are separated from each other by means of the lateral side plate (5).

Submissions

According to the patentee, the teaching of document D1 is focused on an open front printer, where the paper is fed in above and exits below. A side compartment is not shown with a separate side plate and the control board is at the back not housed at a lateral side portion of the housing and so no isolation is provided. This is plainly a different situation to specific separation provided by the invention and only an *ex post facto* analysis indicates any relevance.

No material is indicated for the side plate disclosed in document D8. Plate 5, the intermediate plate can be rotated to swing open, there being no indication that the plate bears heavy mechanical parts nor that it is of conductive material. The terminology "catch formed by press work" in document D8 does not necessarily mean that the sideplate is formed of metal. While it might be admitted that there is some similarity between the printer and photocopier fields, even a combination of documents D1 and D8 could only lead to a separate chamber but not to an electrically conductive sideplate. Neither document D8 nor document D10 addresses the problem of protection of electronic control circuitry from electrical noise and static electricity generated in the paper path. In document D10, there is no explicit mention of spacing of part 5 and this does not seem to be the case in Figure 2. The fitting sections are not thin and can be bakelite. The screws through 8 are from the outside which could cause shorts with a metal member, therefore

normally access would be expected to be via an insulating board.

Therefore, having regard to the side plate being made of electrically conductive material, the position thereof and the controlling electronic circuit board being housed at a lateral side portion, it must be concluded that novelty and inventive step are provided by the subject matter of all versions of the claims.

IV. The case of the opponent can be summarised as follows:

Requests

The opponent requests that the patent be revoked.

Submissions

Document D1 discloses that transversely arranged printer parts such as the gate roller 10 and the developing unit 4 are carried by an immovable part 25 shown in Figure 5. In practice they are directly borne, although this is not precisely shown in the schematic Figure. In any case no more is understood by the skilled person in relation to the term "are assembled" as used in the patent claims. It is customary for a metal plate to be used for bearing the printer parts and as for example grounding is neither disclosed nor taught in the patent in issue, such mounting automatically provides any electrical effect provided by the metal plate of the patent. Accordingly, taking document D1 as starting point, the problem addressed by the patent is that of improving maintenance of the page printer. Both document D8 relating to a copying machine or laser printer and document D10 relating to a copier

are in the same technical area as the patent. In document D8, catches 19 in the form of tongues are formed by press work in the sideplate 1, which can only be done with metal. These documents disclose arrangement of a side compartment for electronic components exactly for the same purpose as the patent. There can therefore be no inventive step involved in the subject matter of the independent claims according to the main request. The first to third auxiliary requests do not in substance contain any more than combinations of features of the independent claims of the main request and thus lack an inventive step for the reasons already given. No particular advantage has been advanced for the feature relating to the side wall of the housing as recited according to the independent claims of the fourth auxiliary request and in any case document D10 shows a further unreferenced side plate in Figure 2 thereof. The light writing unit disclosed by document D1 is also at the rear of the printer, so that the subject-matter of the fifth auxiliary request also lacks an inventive step.

- V. The board gave its decision at the end of the oral proceedings.

Reasons for the Decision

1. *Admissibility of the appeal*

The appeal complies with the provisions mentioned in Rule 65(1) EPC and is therefore admissible.

2. *Prior Art*

Pertinent disclosures in prior art documents in the proceedings are as follows:

2.1 Document D1

According to Figure 1, this document discloses a printer with a cylindrical photosensitive member 1 which is rotatably mounted. A charging device 2, an optical signal generator 3 for irradiating the photosensitive member 1 with a light pattern in accordance with the image to be produced, a developing device 4 for developing a latent image on the photosensitive member 1, a transfer device 5 for transferring the developed image from the photosensitive member 1 to the sheet of paper, a cleaning device 6 for cleaning toner from the photosensitive member 1, and an erasing device 7 are disposed around the photosensitive member 1. A paper stacker 8, a paper feed roller 9 and paper register rollers 10 are disposed above the photosensitive member 1, while a fixing device 11 for fixing on the sheet of paper the developed image which has been transferred thereto, a paper guide plate 12, delivery rollers 13, an exhaust fan 14 and a power supply 15 are disposed below the photosensitive member 1. A control board 16 is disposed on the rear side of the body of the apparatus. The optical signal generator 3 is shown to the rear of the printer in Figure 1. The apparatus is provided with an outer casing 17.

2.2 Document D8

The technical field of this document relates to a recording device such as an electrophotographic system copying machine and a laser printer, and more

particularly to various drivers for respective elements of the device. An object addressed is facilitating inspection and replacement by dividing various drivers into units for collective arrangement. According to Figure 1, first and second driver cases are fitted to a sideplate 1 with an intermediate plate 5 pivotally attached to a bottom plate 4 of the recording device. Normally, the intermediate plate is raised in parallel with sideplate 1 and fixed to screw seats 7 by screws 21 as shown in Figure 2. A first driver case 2 houses various drivers.

2.3 Document D10

The object of the device disclosed in this document is to provide an electric parts fitting mechanism facilitating assembly repair and checking operations. Use of a copier is described with a hinged electric parts unit 3 (see Figures 1 and 2) and a cover 2 screwed to the electric parts unit. The electric parts unit comprises a chassis 5 to which electric parts 4 and the electric parts unit 3 are fitted. Removal of the cover fitting screw 13 allows checking and repair of the electric parts. Chassis fitting screws 7 fix fitting section 8 to stays 6 to screw to the copier body.

3. *Novelty - Main Request*

3.1 Document D1 does not disclose that the printing mechanism and the electronic control circuit portion are separated from each other by means of an electrically conductive lateral side plate (claims 1 to 3) such that upon movement of a movable member the controlling electronic circuit is accessible during

operation of the page printer (claim 1 to 2). Neither document D8 nor document D10, the latter document relating to a copier, are specific as to the structure of the internal mechanical parts of the device such as the gate and paper discharging rollers, nor is there a specific reference to an "electrically conductive" property.

In view of the foregoing, novelty over the disclosures of documents D1, D8 or D10 can be considered present in the subject matter of the independent claims. The other prior art documents do not come closer to this subject matter.

4. *Inventive Step - Main Request*

4.1 Closest prior art document

Since document D1 discloses a printer with top to bottom throughput like that of the patent in issue the board considers it an appropriate starting point for assessment of inventive step. Three technical issues in the printer art which have been mentioned in the proceedings are relevant to identifying the problem solved by the novel features of the independent claims, these being firstly supporting heavy mechanical members, secondly electrical shielding of circuitry from noise and static produced in the paper path and thirdly improving serviceability of the printer.

4.2 Supporting the heavy mechanical members

It cannot be seen exactly in Figure 1 of document D1 how the mechanical components are supported, because the components are shown in an illustrative way as

though their surroundings were transparent. However, Figure 5 shows a transverse disposition, i.e. between sideplates, of the paper rollers 10 and the developing device 4 in the, not swung open, so called immovable part 25 of the printer. The board thus considers the rollers and developing device as assembled on the immovable part, the necessary supporting part used being a side plate in view of its lateral position. The board moreover considers selecting which rollers are mounted on the movable or immovable part, for example a gate roller or paper discharge roller, to amount to no more than a matter of routine design choice.

Document D1 is not specific as to the material used in the supporting function, but the board has no doubt that metal is the obvious choice in this respect and thus concurs with the opponent that the skilled person knew this without any positive recitation in this sense being necessary.

4.3 Shielding the circuitry

According to document D1 a control board 16 is disposed on the rear side of the body of the apparatus. From Figure 1, it can be seen that this board is within the immovable part 25, therefore it is not shielded by the lateral supporting arrangement for the rollers (side plate). However, it is self evident from elementary physics that if - and this is not mentioned in document D1 - the board were outside the metal supporting arrangement (side plate), it would then be so shielded.

4.4 Improving serviceability of the printer

Since according to document D1 the circuitry is not

disposed laterally outside the supporting arrangement (side plate), serviceability is not improved.

Therefore, the printer of document D1 is, as correctly portrayed in the patent in issue right from the original European application, subject to problems in this area.

4.5 Problem addressed by the patent

The board thus reached the view that the real technical problem addressed by the novel features of the patent is improving serviceability as once the circuitry is laterally outside the rollers, the shielding amounts to no more than an obvious consequential technical effect of the metallic supporting arrangement (side plate) avoiding, de facto, accumulation of electric charge consequent to distribution over the part concerned.

The object of the device described in document D8 is to facilitate inspection and replacing by dividing various drivers into units and collectively arranging these drivers (page 4, bottom). The object of the device described in document D10 is to provide an electric parts unit fitting mechanism which can facilitate operations for assembly, repair and check (page 2, third heading in square brackets). Both of documents D8 and D10 are therefore concerned with the same problem as that of the patent. Since copiers are technically closely related to printers, the board moreover considers the skilled person would have taken there teachings into account in the context of the problem addressed by the patent in dispute.

Both document D8 and document D10 provide the circuitry laterally outside the mechanical components i.e.

outside side plate 1 and chassis 5, respectively. Both also have a movable member for access (see items 5 and 2, respectively). The board therefore considers it would have been obvious to the skilled person in the light of document D8 or D10 to move the circuitry of the printer of document D1 outside the lateral supporting arrangement of the rollers (side plate) to enhance serviceability. Accordingly, the board reached the conclusion that the subject matter of the independent claims cannot be considered to involve an inventive step.

It follows from the foregoing that the board cannot agree with the approach of the patentee that only an *ex post facto* analysis makes document D1 appear relevant as it is relevant as a starting point because of the paper path. Furthermore, the board does not agree with the view of the patentee that a combination of documents D1 and D8 provides a separate chamber without an electrically conductive sideplate as the latter and with it the electrical effects are obvious for the reasons given in section 4.2 and 4.3 above.

The board moreover disagrees with interpretations of documents D8 and D10 advanced by the patentee in the direction that metal does not separate the circuitry from the paper path. In particular, the reference to press work in document D8 while not conclusive, indicates to the board that the side plate is more likely to be of metal than not and thus renders metal an obvious possibility. Furthermore, the board agrees with the opposition division and the opponent that Figure 1 of document D10 is decisive for showing that the circuit board to which the cable from 10 is connected is separated from the chassis 5. It cannot

therefore be concluded from Figure 2 that the screws 8 can short the circuit board as the separation means that no shorting occurs. Moreover, the board concurs with the first instance that the shape of the fitting sections 8 indicate the chassis 5 is made of metal and thus is not persuaded that bakelite is used.

Therefore, the lines of argument advanced by the patentee failed to convince the board that the independent claims are directed to subject matter which can be considered to involve an inventive step according to Article 56 EPC.

5. *Auxiliary Requests*

5.1 The independent claims of the first to third auxiliary requests involve rearrangement of features intended to meet admissibility issues raised before the first instance but do not contain any fresh substance which has not been dealt with in the substantive context of the main request. Therefore the board also considers that the subject matter of the independent claims according to the first to third auxiliary requests lacks an inventive step.

5.2 The independent claims of the fourth auxiliary request contain a fresh feature involving provision of the lateral side portion adjacent to the sidewall as can be seen in Figure 6 of the patent. However, as pointed out by the opponent, an unreferenced sidewall is shown in Figure 2 of document D10 and the electrical components are separated by this sidewall and the chassis. Similarly, the fresh feature of the fifth auxiliary request relating to the light writing unit is met by the optical signal generator 3 being located at the

rear of the printer disclosed by document D1 (see for example Figure 1). Accordingly, there is nothing contained in the independent claims according to either the fourth or fifth auxiliary request which could introduce an inventive step over the subject matter already considered obvious in view of a combination of documents D1 and D8 or D10.

- 5.3 Accordingly, none of the auxiliary requests contain independent claims directed to subject matter which can be considered to involve an inventive step according to Article 56 EPC.

Order

For these reasons it is decided:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:

P. Martorana

E. Turrini