BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS | BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE | CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS

Internal distribution code:
(A) [ ] Publication in OJ
(B) [ ] To Chairmen and Members
(C) [X] To Chairmen

D E C I S I O N
of 18 October 1996

Case Number: T 1108/92 - 3.2.5

Application Number: 84105774.8

Publication Number: 0127831

IPC: B41F 33/00

Language of the proceedings: EN

Title of invention:
Closed loop register control

Patentee:
WEB PRINTING CONTROLS CO.

Opponent:
Heidelberger Druckmaschinen AG
Presstech Controls Ltd.

Headword:
-

Relevant legal provisions:
EPC Art. 52(1), 54(1), 56(1)

Keyword:
"Fresh ground of opposition without patent proprietor's consent - not considered"
"Inventive step - yes"

Decisions cited:
T 0156/84, G 0010/91

Catchword:
-

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1108/92 - 3.2.5

D E C I S I O N
of the Technical Board of Appeal 3.2.5
of 18 October 1996

Appellant: (Opponent)
Heidelberger Druckmaschinen AG
Kurfürsten-Anlage 52-60
Postfach 10 29 40
D-69019 Heidelberg (DE)

Representative:
-

Other party: (Opponent)
Presstech Controls Ltd.
Harland House
151 Silbury Boulevard
Grafton Gate Estate
Central Milton Keynes MK9 1LE (GB)

Representative:
Maury, Richard Philip
Sommerville & Rushton
45 Grosvenor Road
St. Albans
Herts AL1 2AW (GB)

Respondent: (Proprietor of the patent)
WEB PRINTING CONTROLS CO.
23872 North Kelsey Road
Lake Barrington
Illinois 60010 (US)

Representative:
Newstead, Michael John
Page & Hargrave
Temple Gate House
Temple Gate
Bristol BS1 6PL (GB)

Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted 19 October 1992 rejecting the opposition filed against European patent No. 0 127 831 pursuant to Article 102(2) EPC.**

Composition of the Board:

Chairman: G. O. J. Gall
Members: c. G. F. Biggio
W. D. Weiss

Summary of Facts and Submissions

I. The Opponent I (appellant) filed an appeal against the decision of the opposition division of 19 October 1992 whereby its opposition and that of Opponent II (party to appeal proceedings as of right) both concerning European patent 0 127 831 and based on Article 100(a) EPC in conjunction in conjunction with Article 56 EPC (lack of inventive step) were rejected and requested the decision under appeal to be set aside and the patent be revoked in its entirety.

II. The proprietor (respondent) requested as its main request the appeal be dismissed . The independent Claims 1 and 7 of the patent at issue read as follows:

Claim 1:

"1. A closed loop register control system for providing proper register in multi-colour printing in connection with a moving web or a sheet substrate (27) having a multi-colour image (30) thereon, means (20) for monitoring said moving web (27) and for generating a position signal of the multi-colour image by observing said moving web (27), means (44) for supplying a reference position signal for a running image, means (in 42) for storing said reference position signal, comparator means (46) for comparing said reference position signal with said position signal of the multi-colour image and means (48,50) for providing automatic substrate position correction in the event of a correction signal being generated by said comparator means (46), characterized in that said means (20) for monitoring said moving web (27) comprises a television camera (20) adapted to be displaceable into a desired position to view any segment of the multi-colour image (30) on said moving web (27), and that means (22,24)

are provided for displacement of said television camera (20) including means for receiving a coordinate signal to provide said displacement of the television camera relative to the web (27) to permit observation of any selected segment of the multi-colour image (30), means (16, 17) under operator control for generating said coordinate control signal for carrying out said displacement, and means (42) for electronically storing a position-signal corresponding to a dot of a first colour and at least of a second colour respectively of the selected segment of the multi-colour image as observed by said television camera, said comparator means (46) comparing said electronically observed colour position signals of said segment (30) with the said reference position signal to determine if adjustment is necessary."

Claim 7:

"7. A method for providing a closed loop register control to in turn provide proper register in multi colour printing in connection with a moving web or a sheet substrate (27) having a multi-colour image (30) thereon, said method comprising the steps of displacing a television camera (20) into a desired position so as to view any segment of said multicolour image (30), and receiving under operator control a coordinate control signal to displace said television camera (20) into the desired position to permit observation of a selected segment of the multi-colour image, generating under operator control said coordinate control signal for carrying out said displacement, electronically storing a position signal corresponding to a dot of a first colour and at least of a second colour respectively of the selected segment of the multicolour image as observed by the television camera (20), establishing a reference position signal and comparing said electronically observed colour position signals of said

segment with said reference position signal for providing automatic substrate position correction in the event of a corrective signal being generated by said comparison."

III. As its auxiliary request, the respondent requested the patent to be maintained as amended with the expression "dots" to be exchanged for "raster dots" both in Claim 1 and 7.

IV. Oral Proceedings were held on 18 October 1996.

V. The appellant and the party as of right cited the following documents:

D1/1 = US-A-4 135 664,

D1/2 = K. Haller, Das FOGRA-Meßmikroskop (FOGRA-Mitt Nr. 68, April 1971),

D1/3 = M. Brune, Anwendung der Fernsehbildbewertung für Meßaufgaben aus der Drucktechnik (Vortrag anläßlich der FOGRA-Mitglieder-versammmlung, Mai 1971),

D1/4 = Passerabweichungen auf der Spur (Der Polygraph 20-76, Seiten 1412-1413),

D1/5 = GB-B-1 460 433,

D1/6 = DE-A-2 416 009,

D1/7 = E. Kollecker, W. Matuschke, "Der moderne Druck", 2. Auflage, 1958, Seiten 206-208 and 431-432 (the document was filed on 17 February 1993),

D1/8 = DE-A-2 646 925 (published on 20 April 1978),

D1/9 = DE-A-3 209 484 (published on 29 September 1983),

D2/1 = J. F. CROSFIELD Ltd., Electronics for the graphic arts,

D2/2 = US-A-3 439 176,

D2/3 = US-A-4 232 336,

D2/6 = Autotron 160: Operator's Manual, pages 1/17 and 1/18,

D2/7 = Autotron 160: Bid by Crossfield Electronics Benelux of 29 October 1982,

D2/8 = Autotron 160: Order by van Boekhoven-Bosch BV of 28 March 1983,

D2/9 = Autotron 160: English translation of D2/8,

D2/10 = Autotron 160: English translation of D2/7,

D2/12 = GB-A-1 357 648,

D2/13 = GB-A-2 115 145 (published on 1 September 1983), and

Operator's Manual of "Microtrak CCR", pages 1-3 to 1-6 (cited on 17 September 1996).

VI. The appellant made the following submissions:

It was the object of the invention, in a closed-loop register control system to avoid printed register marks. From document D1/4 (with document D1/2 referred to therein) it was known to measure register errors in a moving web by means of a television camera. To attain

that object, the controlling operator would direct the camera to a suitable point of the web. Document D1/6 taught how to control the displacement of the camera. Since the prior art instructed a person skilled in the art to substitute the known register marks by a measurement of the printed image according to the features of independent Claims 1 and 7, the disputed patent lacked any inventive step.

VII. The party as of Right (Opponent II) endorsed the statement of the appellant. The documents D1/1, D2/12, D1/4 and D1/6 were all very relevant. Using the teaching of one or two of these documents, together with the knowledge of a skilled person, one would arrive at the invention in question.

VIII. The respondent, as a first preliminary matter, requested that documents:

D1/8 = DE-A-2 646 925 (published on 20 April 1978),

D1/9 = DE-A-3 209 484 (published on 29 September 1983), and

D2/13 = GB-A-2 115 145 (published on 1 September 1983),

introduced by the Appellant and by Opponent II, respectively, be excluded from the appeal.

This request was substantiated as follows:

- document D1/8 was no more relevant than the other prior art documents already in the procedure, while

- D1/9 (published on 29 September 1983), and D2/13 (published on 1 September 1983), were both

published after the priority date of the patent at issue and therefore did not pertain to the prior art pursuant Article 54(2) EPC.

As a second preliminary matter, the respondent pointed out

- that, during the opposition procedure, the sole ground for opposition invoked by both the Opponents was lack of an inventive step, pursuant to Article 100(a) EPC,

- that the mention, by the Appellant and by the Opponent II, of documents D1/9 and D2/13, respectively, amounted to a fresh ground of opposition, namely lack of novelty; these two documents pertaining only to the prior art pursuant to Article 54(3) EPC, and

- that the mention, by Opponent II, of the Operator's Manual of "Microtrak CCR", pages 1-3 to 1-6, and the submissions based thereupon, amounted to a ground of opposition pursuant to Article 100(b) EPC, i.e. to a further fresh ground for opposition.

The Respondent stated that it did not consent to the introduction of any of these two fresh grounds of opposition. It requested an adjournment of four months to study the document ("Microtrak CCR") filed by Opponent II with its letter dated 17 September 1996.

The respondent made the following further submissions:

The principal difference between the invention and documents D1/2, D1/3 or D1/4 lay in the fact that they were used for a final quality check of the completed printed product. They did not hint at checking for

register errors on the moving web during printing process. Documents D1/1 and D1/12 used marks on the web. It was not obvious to use raster dots for detecting register errors, since these dots were very small and numerous and were therefore not identifiable. The subject matter of the invention is therefore inventive.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is therefore admissible.

2. The submissions of the party as of Right (Opponent II) constitute a ground of opposition pursuant to Article 100(b) EPC which was never raised before the Opposition Division, so that it would constitute now a fresh ground of opposition, which is not admissible without the patent Proprietor's consent (see G 10/91, OJ EPO 1993, 420). Since the patent proprietor did not give his consent, that ground of opposition is not at issue. Consequently neither the document "Microtrac CCR" nor the submissions based thereupon are considered.

3. *Late filed documents*

3.1 Document D1/7

This document was filed together with the Grounds of Appeal, it relates to admittedly general background art. The Board has, thus, no reason to exclude this document from consideration.

3.2 Document D1/8

This document was mentioned by the Appellant in order to show that the person skilled in the art was well aware, before the priority date of the patent at issue, that the raster dots of one colour have a defined and fixed distance from each other and that they are arranged with a defined angle with respect to the direction of printing.

Such background knowledge of the person skilled in the art is derivable from other prior art documents already considered during the opposition procedure and in the appealed decision. Document D1/8 is, consequently, not more relevant than the other prior art documents already considered during the opposition proceedings and therefore is not introduced into the proceedings (T 156/84).

3.3. Documents D1/9 and D2/13

These two documents were published on 29 September 1983 and on 1 September 1983, respectively, i.e. after the priority date of the patent at issue, 2 June 1983. Accordingly, they do not pertain to the prior art pursuant Article 54(2) EPC and would, at the most, be relevant for the appreciation of the novelty of the claimed subject-matter.

The Board does not admit into this appeal documents D1/9 and D2/13 which accordingly do not need to be considered.

3.4 Operator's Manual of "Microtrak CCR"

This document was published well after the priority date of the patent at issue, 2 June 1983. Accordingly, it does not pertain to the prior art pursuant to Article 54 EPC.

3.5 From these late filed documents, the Board decided to admit only document D1/7, but not to admit documents D1/8, D1/9 and D2/13 since they were not considered relevant. Further, the Board rejected the requested adjournment.

4. The prior art documents to be considered in the appeal procedure are, consequently:

D1/1 = US-A-4 135 664,

D1/2 = K. Haller, Das FOGRA-Meßmikroskop (FOGRA-Mitt. Nr. 68, April 1971),

D1/3 = M. Brune, Anwendung der Fernsehbildbewertung für Meßaufgaben aus der Drucktechnik (Vortrag anläßlich der FOGRA-Mitglieder-versammmlung, Mai 1971),

D1/4 = Passerabweichungen auf der Spur (Der Polygraph 20-76, Seiten 1412-1413),

D1/5 = GB-B-1 460 433,

D1/6 = DE-A-2 416 009,

D1/7 = E. Kollecker, W. Matuschke, "Der moderne Druck", 2. Auflage, 1958, Seiten 206-208 und 431-432,

D2/1 = J. F. CROSFIELD Ltd., Electronics for the graphic arts,

D2/2 = US-A-3 439 176,

D2/3 = US-A-4 232 336,

D2/(6 to 10) = Autotron 160, and

D2/12 = GB-A-1 357 648.

5. *Novelty*

The novelty of the claimed subject-matter was never disputed.

6. *Problem and solution*

6.1 The subject-matter of Claim 1 concerns a closed loop control system in multicolour printing which is performed on a moving web or sheet substrate.

Of the documents which, according to the above statements, are considered during the appeal proceedings, only the documents D1/1, D2/1, D2/(6 to 10), and D2/12 are covered by this designation.

All of these known systems need a particular register mark printed at a predetermined place outside the image where it can be easily identified and distinguished from its environment.

According to document D2/12, in intaglio printing, also printed colour outlines within the printed image may be used instead of such a register mark. Since the subject-matter of Claim 1 of the patent in suit clearly

refers to such printing processes in which the images are composed of raster dots, this known teaching originating from an alien technique is clearly not applicable.

Document D2/1 is silent about how the system on which this document is based functions in detail. Consequently, its statement that "no register mark is required for many designs" lacks any teaching with respect to what should be taken instead.

Therefore, document D1/1 in the description of the patent in suit has still to be rated as the closest state of the art. The state of the art represented by the documents D2/(6 to 10) may be equivalent in this respect but does not approach the subject-matter of Claim 1 more closely.

This state of the art suffers from the drawbacks enumerated in the patent in suit (see EP-B-0 127 831, column 1, line 60, to column 2, line 39), the removal of which is the basic problem of the patent in suit.

6.2 The problem is solved by the features in the characterising portion of Claim 1.

The principle of this solution is that a pattern of raster dots at a discretionarily selected place of the image is taken as control reference instead of an individual and identifiable register mark located at a predetermined place on the print substrate.

Contrary to the known systems functioning on the basis of particular registration marks which have to be identified and localised by the system, the system according to the patent in suit can take any dot of a particular colour which has been chosen as a reference and determines the positions of the neighbouring dots

of the other colour in relation to this arbitrarily chosen in the selected segment of the multicolour image. Two prerequisites which are indispensable for the system of the patent in suit to function are silently taken for granted. The printing process used must be such as to apply regular dot rasters and, hence, amplitude modulation for the control of each of the colours involved, and the segment of the multicolour image must be selected to contain dots of all the colours involved.

7. *Inventive step*

7.1 Document D1/4 (see first paragraph in the text), on which the appellant has put much emphasis, concerns the determination of statistical register differences which are due to inaccurate working of a single print unit or to fluctuations of the paper quality. This source of unsystematic errors results in that the position of the image of the same dot unsystematically varies its position on successive print sheets. This kind of unsystematic errors, the assessment of which involves only monochromatic measurements, can only be eliminated by replacement of the unprecisely working part or by the choice of another paper quality but is not accessible to a closed loop control. In contrast thereto, the subject-matter of the patent in suit concerns the systematic errors on a single print sheet which passes successive print units and which are due to the fact that the units are not in perfect mutual register. The assessment of this kind of errors needs the discrimination of colours in addition to the determination of positions.

Consequently, even when interpreted in the light of the document D1/2 teaching how to use a measuring microscope to analyse print products, document D1/4 cannot lead a skilled person to the subject-matter of Claim 1.

7.2 The other documents considered do not lead to the invention either, because they relate to more remote subject matter.

Document D1/1

This document was cited in the specification as the closest prior art and used for delimiting independent Claims 1 and 7. Preprinted targets or markings in connection with the register technology are used.

Document D1/3

This document relates to the use of a television camera for a quantitative electronic image analysis in printing technics, e.g . for quantifying brightness differences in raster values.

Document D1/5

This document shows an image analysis apparatus comprising a television camera coupled to a microscope as well as means for positioning it in respect of the object to be examined.

Document D1/6

This document describes a remotely controlled picture-taking unit with a flash for viewing the printed image.

Document D1/7

This document was cited as being a standard literature and showing on pages 431 and 432 an automatic register control for printing machines.

Document D2/1

This document relates to automatic register controls for pre-printed webs, indicating that for many designs no register mark is required and where a register mark is necessary this need not lie in a clear track and with small measures.

Document D2/2

This document shows a photoelectric register control using printed register marks on the web, the passage of the marks to be detected by light sensitive cells.

Document D2/3

This document refers to a device for inspection of elongated material where a video camera produces a video signal of the light and shadowed areas which signal is electronically analysed with respect to the number of such alternating areas.

Documents D2/(6 to 10)

These documents relate to "Autotron 160 - Offset" device which automatically controls the peripherical and lateral colour register of a paper web printed on both sides in four colours. Register marks are detected by two multi channel scanning heads (see document D2/7 and its English translation in document D2/10). Document D2/6 is an excerpt of the Operator's Manual relating to the LED Cross Display, the appropriate LED

being illuminated for the duration of a register correction. It comes out that register marks are used with that equipment. Document D2/8 (the English translation of which is contained in document D2/9) is an offer for delivery of that equipment.

Document D2/12

This document relates to the detection of registration errors in a multi-colour rotary printing machine. Printed register marks (in printed and/or not printed areas) may be used, or, instead of using register marks, a registration controller determining registration errors.

8. Hence, the contested invention is neither known nor suggested by the considered prior art. It therefore meets the requirements of Article 52(1) in conjunction with Articles 54(1) and 56(1) EPC.

The auxiliary request needs therefore not be considered.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

A. Townend G. Gall