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Bezeichnung der Erfindung: Improvements relating to rotary printing presses
Title of invention:
Titre de l'invention :

Klassifikation / Classification / Classement : B41F 9/04, B41F 13/00

ENTSCHEIDUNG / DECISION

vom / of / du 18 May 1989

Anmelder / Applicant / Demandeur :

Patentinhaber / Proprietor of the patent /
Titulaire du brevet :

Crosfield Electronics Ltd.

Einsprechender / Opponent / Opposant :

Heidelberger Druckmaschinen AG.

Stichwort / Headword / Référence : Printing presses/Crosfield

EPÜ / EPC / CBE Article 56 EPC

Schlagwort / Keyword / Mot clé : "Inventive step (No) "

Leitsatz / Headnote / Sommaire

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Beschwerdekammern

Boards of Appeal

Chambres de recours



Case Number : T 78/87 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 18 May 1989

Appellant : Crosfield Electronics Ltd.,
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Respondent : Heidelberger Druckmaschinen AG
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Representative :

Decision under appeal : Decision of the Opposition Division of the European
Patent Office dated 11 December 1986 revoking
European patent No. 0 047 165 pursuant to
Article 102(1) EPC.

Composition of the Board :

Chairman : F. Gumbel
Members : C.T. Wilson
F. Benussi

Summary of Facts and Submissions

I. European patent No. 0 047 165 was granted on 28 November 1984 with nine claims on the basis of European patent application No. 81 303 971.6.

II. The patent was opposed in due time and form on 7 August 1985. The Opponent requested revocation of the patent on grounds of lack of novelty and of inventive step in the light of the following documents:

US-A-3 654 864 (D1)

DE-A-1 960 959 (D2)

DE-A-2 043 140 (D3)

DE-A-2 107 738 (D4)

DE-B-2 725 093 (D5)

US-A-3 636 251 (D6)

DE-A-2 111 628 (D7)

In response to a letter dated 30 January 1986 from the Patentee contesting the opposition and accompanied by amended claims, the Opponent asserted that the amended claims still lacked an inventive step, and cited the following documents:

DE-A-2 435 203 (D8)

DE-A-2 529 009 (D9).

III. By a decision dated 11 December 1986, the Opposition Division revoked the European patent on the grounds of lack of inventive step in the light of the following documents:

US-A-3 654 864 (D1)
DE-A-1 960 959 (D2)
US-A-3 636 251 (D6)
DE-A-2 111 628 (D7)
DE-A-2 435 203 (D8)

IV. The Patentee appealed against this decision on 10 February 1987, at the same time paying the appropriate fee. With his grounds for the appeal, filed on 15 April 1987, he filed a new specification restricting the claims and description to gravure printing systems only. He submits that the teachings contained in the cited documents are incompatible and that it is only with the benefit of hindsight that the documents appear relevant. In particular, he alleges that the disclosure of DE-A-2 435 203 is concerned with a very unusual mixture of a lithographic press and a letter press, whilst the remaining documents relate to gravure printing systems. The man skilled in the art of gravure printing could not be expected to consider documents in the other fields. He refers in this respect to Decision T 176/84, OJ 1986, 50 and encloses an Affidavit of a Mr. A.L. Grainger, an expert in the printing art.

The Patentee requests to set aside the impugned decision and to maintain the patent on the basis of the new specification filed on 15 April 1987 comprising:

Description, pages 1 to 9,
Claims 1 to 5, and
Drawings, sheets 1/3 to 3/3.

Claim 1 reads as follows:

"A gravure printing press including a rotary printing cylinder (1), and a laser beam imaging device (5) for

forming an image on the rotary printing cylinder whilst it is located in the press, means including a doctor blade to apply ink to the printing cylinder (1), and an impression cylinder (3)

characterised in that the press is a colour printing press, in that the laser beam imaging device (5) is arranged to engrave two colour separations (2) of the same image around the surface of the printing cylinder (1), in that the means to apply ink includes at least two inking assemblies (4) arranged to apply inks of different colour, the doctor blade of each inking assembly (4) being movable towards and away from the printing cylinder and so that, in use, each doctor blade contacts only its corresponding engraved colour separation and each inking assembly (4) applies ink only to its corresponding colour separation (2), and in that means are provided to hold a sheet of substrate to be printed in a fixed position on the impression cylinder (3) until it has been contacted and printed on by all of the different colour separations (2) engraved around the rotary printing cylinder (1)."

V. In his response received 8 September 1987, the Respondent (Opponent) contests all the arguments of the Appellant, and objects to the new Claim 1 as lacking an inventive step in the light of the disclosure of US-A-3 654 864 (D1) and DE-A-2 435 203 (D8). He maintains his request for revocation of the patent.

VI. In a communication dated 15 February 1989 accompanying the summons to oral proceedings requested by the Appellant and appointed for 18 May 1989, the Board set out its provisional opinion that it would appear obvious for the man skilled in the art to apply the teaching of D1 to the known printing press of D8 in order to arrive at the subject-matter of Claim 1. In respect of the Affidavit, the Board also referred to two articles, namely the 15th

Edition of the New Encyclopedia Britannica, 1977, page 1069, and Bruckmann's Handbuch der Drucktechnik, 1976, page 181.

- VII. In a telefax dated 8 May 1989 (duly confirmed by letter), the Appellant informed the Board that he would not be attending the oral proceedings but would be relying essentially on the arguments and evidence already submitted in writing. He maintained that the skilled man's knowledge of roto gravure and the problems arising from inter-ink contamination as a result of the thin mobile inks used for gravure printing would prejudice the skilled man from attempting to print more than one colour separation at any single printing station.
- VIII. At the oral proceedings, no one was present on behalf of the Appellant. The Respondent argued essentially that no great prejudice existed. Whilst the man skilled in the art would have to consider the problem of inter-ink contamination, it would not be difficult to solve for a slow-running proofing press. This is also apparent from the fact that the Patentee did not consider it necessary to define any solution to the problem of inter-ink contamination in Claim 1. The Respondent emphasised the difference in this respect between a slow running proofing press and a high speed production machine.

Reasons for the Decision

1. The appeal is admissible.
2. The new Claim 1 corresponds essentially to Claim 2 of the contested decision and of the patent, re-drafted in the two-part form. However, reference should have been made in

line 11 of the claim to "at least two" colour separations (2) to read consistently with the provision in the claim of "at least two" inking assemblies (lines 13, 14) and of "all" of the different colour separations.

No formal objections arise in respect of the other claims, the description, and the drawings. The whole specification has been revised to restrict the patent to gravure printing.

3. According to the contested patent the invention relates to gravure printing presses and sets out from the monochrome gravure printing press according to D1 including a rotary printing cylinder, a laser beam imaging device for forming an image on the rotary printing cylinder whilst it is located in the press, means including a doctor blade to apply ink to the printing cylinder and an impression cylinder.
4. According to the opening pages of the patent:

"Typically, for full colour printing, four separate colour impressions are overlaid on top of one another. In a four colour process the different impressions are made with black, yellow, cyan and magenta colour inks. Typical gravure printing presses are very large and four presses are arranged in series one downstream of the other with an ink drying station provided downstream from each press to ensure that the ink on the substrate from that press is dry before the substrate reaches the next press. Such presses are fed by a continuous web of substrate and means are provided to keep the various printing presses in synchronism with one another so that the impressions from successive printing machines are registered one on top of the other. A considerable effort is involved in the preparation of the printing members, in their initial

setting up and in the setting up of the presses to ensure that the impressions printed by each press are in exact registration with one another.

Nowadays, the image which is to be printed is usually scanned by an electronic scanner and is encoded into the form of a stream of digital data. It is possible to operate on this data to enlarge or reduce the size of the image, to apply colour corrections, and to vary the page layout. A set of printing members is then prepared directly from this data after it has been operated upon. Thus, the complete set of printing members has to be prepared without any initial visual inspection or proofing step. In view of the difficulty and expense of preparing such a set of printing members and the difficulty of setting up a conventional colour press, it is desirable to be able to proof the digital data to ensure that it is correct and to ensure that it meets with the approval of the customer before undertaking the preparation of the set of printing members and undertaking the complete setting up of a conventional colour printing press."

5. According to the patent, the object of the invention is, starting from D1, to produce a colour gravure printing press suitable for proofing and for printing short, limited print runs.
6. According to the invention, this is achieved in that the gravure printing press is arranged for colour printing and the laser beam imaging device is arranged to engrave (at least) two colour separations of the same image around the surface of the printing cylinder, the means to apply ink includes at least two inking assemblies arranged to apply inks of different colour, the doctor blade of each inking assembly being movable towards and away from the printing cylinder and so that, in use, each doctor blade contacts

only its corresponding engraved colour separation and each inking assembly applies ink only to its corresponding colour separation, and means are provided to hold a sheet of substrate to be printed in a fixed position on the impression cylinder until it has been contacted and printed on by all of the different colour separations engraved around the rotary printing cylinder.

7. A printing press suitable for proofing and including a rotary printing cylinder, means to apply ink to the printing cylinder, and an impression cylinder is known from DE-A-2 435 203 (D8).

Moreover, the press includes a plurality of colour separations of the same image around the surface of the printing cylinder. The means to apply ink includes at least two inking assemblies arranged to apply inks of different colour, and movable towards and away from the printing cylinder so that, in use, each assembly contacts only its corresponding colour separation and applies ink only to its corresponding colour separation. Means are provided to hold a sheet of substrate to be printed in a fixed position on the impression cylinder until it has been contacted and printed on by all of the different colour separations around the rotary printing cylinder, cf. Figure 12 and the descriptive passages at page 106 (original page numbering is adhered to), paragraph 5 to page 107, paragraph 2, page 6, first complete paragraph to page 7, second paragraph, inclusive, and, page 14, last paragraph to page 15, line 2. This press clearly has the desired advantage that registering of paper sheets, or a web, necessary in tandem arrangements of presses for colour printing is no longer necessary here, and this would be clear to the man skilled in the art (cf. page 7, paragraph 1).

Hence, in the Board's view, D8 reflects the nearest prior art.

8. The subject-matter of Claim 1 differs essentially therefrom in that:

(i) the press is a gravure printing press rather than a mixture of offset-lithography and letter press, so that each inking assembly includes a doctor blade;

(ii) the press is provided with a laser arranged to engrave the at least two colour separations of the same image on the rotary printing cylinder whilst it is located in the press.

9. The problem to be solved vis-à-vis this prior art by the present invention, based on what is actually achieved over the above nearest prior art, would therefore appear to be to render the apparatus known from D8 suitable for gravure printing and to eliminate the difficulties, e.g. damage caused to printing members, involved in transferring printing members from the preparing machine to the printing press.

10. The posing of this problem does not appear to contribute to the presence of any possible inventive step. The man skilled in the art must be expected to attempt always to improve machines, either for example by making them more adaptable or by eliminating faults.

11. As far as the above-referred to differences are concerned, the following is pointed out:

Difference (i): In the known device, the inking assemblies include the known inking rollers and plates

etc. required for lithographic and letterpress printing. According to Claim 1, these are replaced by inking assemblies including doctor blades. Such inking assemblies are however absolutely standard in the art of gravure printing, see for example US-A-3 654 864 (D1). It would therefore appear from Claim 1 that the adaptation of the apparatus of D8 for gravure printing required merely the replacement of one known type of inking assembly by another known standard inking assembly. The man skilled in the art of any particular form of printing must be expected to be aware at least of the basic techniques of neighbouring forms of printing.

Difference (ii): As pointed out above, a monochrome gravure printing press is known from D1. In this press, a laser beam imaging device is included for forming an image on a rotary printing cylinder whilst it is located in the press. This clearly obviates the problems of damage to printing members on transfer from a preparing machine to a printing press.

12. It would therefore appear obvious for the man skilled in the art to apply the teaching of D1 to the known printing press of D8 in order to achieve the same advantages, and thus to arrive at the subject-matter of Claim 1, which therefore appears to be lacking in inventive step.
13. The arguments advanced by the Appellant do not appear convincing enough to refute this conclusion.
- 13.1 The Appellant argues that the man skilled in the art would not consider combining the teachings of D8 and D1 since they are incompatible, particularly since they relate to different types of printing. However, the man skilled in the art of gravure printing will be expected to seek solutions to his problem in the neighbouring fields of

printing if he is unable to find a solution in his own field and the same problem arises there. Clearly, in all printing fields there are common problems as admitted by the Appellant. In the present case, where the objectively arrived at problem involves adapting a press for use in gravure printing, the man skilled in this art will be consulted. There were apparently no great difficulties involved in using standard gravure inking assemblies, or at least these are not reflected in the claim.

This lack of any special adaptive features in the claim would also, in the opinion of the Board, tend to argue against the existence of any real prejudice against having more than one colour separation of the same image around the printing cylinders because of the inter-ink contamination due to the fluidity of the ink. The Board agrees with the Respondent that the person skilled in the art would have to take this possible contamination into account, but that since the present invention is concerned with slow-running proofing presses, rather than high-speed production machines, such considerations constitute the normal practice of this person.

Decision T 176/84 referred to by the Appellant is not relevant here. The two fields involved in that decision, namely money boxes and pencil sharpeners were not neighbouring fields as in the present case, but rather distant fields falling under a general field of container closures.

- 13.2 The Appellant states in this Grounds for the Appeal that the arrangement shown in Figure 12 of D8, relied on in the contested decision, is not described specifically as being capable of producing full colour printing. However, whereas this is true, it is also true that in a general statement on page 6 of the citation five basic categories

("Grundkategorien von Druckvorgängen") are defined, for all of which the inventive press of that citation is described as being suitable. One of these basic categories, namely number 3, is the printing of two or three overlapping colours which is all that is necessary to satisfy Claim 1. The apparatus of Figure 12 is clearly capable of printing in this way.

- 13.3 The dangers referred to in Decision T 05/81, to which the Appellant also refers, in respect of ex post facto analysis have been avoided in the present case by resolving the problem objectively from the actual result achieved over the nearest prior art, namely D8, and then assessing whether it would have been obvious for the man skilled in the art to solve this problem in the light of the further revealed prior art, namely D1.
- 13.4 Similarly, Decision T 113/82 is also irrelevant. In the present case there is no series of steps required, and there is no final step not known nor derivable from the prior art, as explained above in paragraphs 7 to 12.
- 13.5 Concerning the Affidavit of Mr A.L. Grainger, it is to be noted that the relevance of the evidence given by Mr Grainger is not clear.

He appears to have been set a problem other than the problem objectively assessed in the present case, and to have arrived at a different answer from the present inventor. One certainly cannot compare an expert in the gravure printing art with the person skilled in the art referred to in Article 56 EPC. He clearly does not have all the knowledge which this notional person skilled in the art has. For example, one reason he gives for not considering the disclosure of D8 appears to be because all gravure

presses which he knows utilise a printing cylinder dipping into an ink bath containing the thin fluid ink, which results in the ink being thrown over the press. However, other inking methods clearly formed part of general knowledge before the priority date of the present patent. For example, at the very latest, in the 15th Edition of the New Encyclopedia Britannica, dated 1977, page 1069, reference is made to the use of a spout for pouring, or of spraying, ink onto the surface of the cylinder to avoid flying ink. Also in "Bruckmann's Handbuch der Drucktechnik", dated 1976, page 181, reference is made again to the use of spraying or of plush cylinders to apply the ink to avoid the problems of the use of high speed cylinders dipping into an ink tank. Hence, this Affidavit also does not provide convincing evidence for the assertion, that the person skilled in the art would not combine the teachings of D8 and D1.

14. Claim 1 is therefore not allowable and Claims 2 to 5 must fall together with Claim 1 to which they are appended. The Board can only decide on the basis of the subsisting requests as a whole.

Order

For these reasons, it is decided that:

The appeal is dismissed.

The Registrar:

S. Fabiani

S. Fabiani

The Chairman:

F. Gumbel

F. Gumbel

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