BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS

BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE

CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS

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File Number: T 586/89 - 3.2.4

Application No.: 85 101 670.9

Publication No.: 0 156 153

Title of invention: Yarn quality monitoring system

Classification: D01H 13/32, D01H 13/26

D E C I S I O N
of 17 June 1991

Proprietor of the patent: Maschinenfabrik Rieter AG

Opponent: W. Schlafhorst AG & Co.

Headword:

EPC Art 54 and 56

Keyword: "Inventive step (yes)"

Headnote

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number : T 586/89 - 3.2.4

D E C I S I O N
of the Technical Board of Appeal 3.2.4
of 17 June 1991

Appellant : (Opponent)
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Representative :

Respondent : (Proprietor of the patent)
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Representative :

Decision under appeal :
Decision of Opposition Division of the European Patent Office dispatched on 10 July 1989 rejecting the opposition filed against European patent No. 0 156 153 pursuant to Article 102(2) EPC.

Composition of the Board :

Chairman : C. Andries
Members : M. Liscourt
F. Benussi

Summary of Facts and Submissions

I. European patent application No. 85 101 670.9 was granted as European patent No. 0 156 153 on 16 June 1987.

II. A notice of opposition against the European patent was filed on 15 March 1988. Revocation of the patent was requested on the grounds of Article 100(a) EPC for lack of inventive step of the subject-matter of the claims. During the proceedings before the Opposition Division the following documents were mentioned:

D1: DE-A-2 056 533
D2: DE-A-2 262 425
D3: EP-A-0 005 083
D4: DE-A-3 235 081
D5: DE-A-2 528 475.

III. By a decision dispatched on 10 July 1989 the Opposition Division rejected the opposition setting out grounds as to why in its opinion none of the cited documents suggests a device or a method as defined in claim 1 or claim 3 respectively of the impugned patent.

IV. Said decision was based on the set of three claims of the patent specification as granted. The independent claims 1 and 3 of the patent read as follows:

Claim 1:
"A monitoring system for a textile processing machine having a plurality of independently operable yarn processing stations,
condition monitoring means capable of representing the current operating condition of each individual processing station,

yarn quality monitoring means adapted to produce a defect signal when a yarn defect is detected at any one of the said stations
characterised by means responsive to the condition monitoring means and to the yarn quality monitoring means to associate said defect signal with one of said stations."

Claim 3:
"A method of monitoring operation of independently operable yarn processing stations of a textile machine said method comprising the steps of
detecting the current operating condition of each individual processing station,
producing a defect signal representing an occurrence of a yarn defect at any one of said stations and associating the defect signal with a change in operating condition at one of said stations representing occurrence of a thread break at that station."

V. On 9 September 1989 an appeal was lodged against this decision and the appropriate fee was paid simultaneously.

The statement of grounds of appeal was received on 10 November 1989. In the statement of grounds the Appellant (Opponent) referred to the same documents as those cited during the opposition proceedings and to a further document:

D6: Melliand Textilberichte 54 (1973) No. 4 reporting the content of a lecture given by Dr. Ulrich Kühn.

VI. During the further proceedings, the Appellant cited for the first time a new document

D7: CH-A-469 620.

VII. Oral proceedings were held on 17 June 1991.

VIII. In the statement of grounds of appeal and during the oral proceedings the Appellant put forward the following arguments in order to support his request for revocation of the patent:

(a) The Melliand document D6 describes a monitoring system showing all the features of claim 1 of the impugned patent and providing for the same results so that its subject-matter is not novel.

(b) If the scope of claim 1 were restricted by specifying how the signals are materially treated, the combination of claims 1 and 2 of document D5 gives the same teaching as Melliand and, further, claim 3 of the same citation gives precisely the solution described by the impugned patent i.e. according to this embodiment of the main claim if, during a testing cycle, a working station is detected which gives a defect signal, a signal is transmitted to the means for collecting the measured values, where the station counter associates (identifies) and stores the measured value in signal storing means which are part of the register for storing the values measured in each station. According to the Appellant, said step of associating is performed by the flip-flop G shown in Figure 3 of document D5 inside a time window when the relevant station is consulted as mentioned in claim 13 of said document D5.

(c) The subject-matter of claim 1 is not inventive if compared with the teaching of documents D1 and D2 because document D2 describes a device showing all the features of claim 1 except that no yarn quality

detecting means are provided. As it is known from document D2 to detect and store several different values for each processing station, it was obvious for the skilled person to adapt the device of document D2 using yarn quality detecting means known from document D1 and to store the obtained values in counters individual to each station just like the results of the station condition detecting means are stored in the device according to document D1.

(d) The combination of the teachings of documents D5 and D7 also leads to the conclusion that the subject-matter of claim 1 was obvious.

IX. The Respondent (Patentee) challenged the above arguments.

X. At the end of the oral proceedings, the Appellant maintained his request that the impugned patent be cancelled and the Respondent repeated his request that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.

2. Interpretation

The Board wants to emphasise that in order to assess the subject-matter of Claims 1 and 3 properly, the expressions used in the claims have to be interpreted on the basis of the whole content of the impugned patent.

2.1 As becomes clear from the block diagram according to Fig. 1 and its corresponding part of the description, the current operating condition of each individual processing

station is collected and stored in some form of condition register in a central monitoring unit, so that that register contains a "picture" of the current (updated) operating condition of each individual processing station. A separate link, so to say, exists between each processing station and that register so that an updating of that "picture" is possible.

This information is present in Claim 1 by the following wording: "condition monitoring means capable of representing the current operating condition of **each** (emphasis added) individual processing station", as well as in Claim 3 by the following wording: "detecting the current operating condition of **each** individual processing station" (emphasis added).

2.2 On the contrary, the block diagram according to Fig. 2 and its corresponding part of the description clearly state that all signals indicating a detected defect at any one of the processing stations are transferred further to be processed without knowing the exact processing station where the defect occurred. This has been formulated in Claim 1 by the wording: "yarn quality monitoring means adapted to produce **a defect signal** when a defect is detected **at any one** of the said stations" (emphasis added), and in Claim 3 by the wording: "producing a **defect signal** representing an occurrence of a yarn defect **at any one** of said stations" (emphasis added).

2.3 The Board cannot follow the Appellant's interpretation given to the features present in Claim 1. Indeed, the statement that each of these features only implies a function or an end result which has to be satisfied and which therefore can be anticipated by features giving that same final result, cannot lead away from the information given by the whole content of the impugned patent, which

clearly defines the precise meaning and the corresponding constructional execution of the features present in the pre-characterising portion of Claim 1, and the difficulties involved therewith.

The features present in Claim 1 therefore not only define functions, but also imply specific kinds of data transfer.

3. Novelty

3.1 Document D6, put forward by the Appellant to attack the novelty of the subject-matter of Claim 1, describes an apparatus which is able to monitor all processing stations individually not only as to their current operating conditions (e.g. spinning or not spinning), but also as to their yarn quality (e.g. thickness).

Since for each processing station the current operating condition and the yarn quality are individually monitored, the apparatus does not comprise yarn quality monitoring means which are adapted to produce a defect signal when a defect is detected at any one of the said stations in the meaning of the present impugned patent (cf. above section 2.2).

The fact that in the apparatus according to document D6 an individualised signal is not only generated for each processing station but also monitored for each of these stations, implies that such an apparatus cannot be compared with the yarn quality monitoring means according to the impugned patent. Indeed, for both monitoring means, i.e. the first one monitoring the defect separately for each processing station (document D6), the other one monitoring all defects irrespective of the processing

station where it occurred (impugned patent), quite different hardware is needed.

3.2 Document D5 describes a system comprising for each processing station a measuring point (Ms(n)) which provides information responsive to different operating parameters (one or more) occurring at that specific station. That individualised information is systematically transferred to a computer (R) via a data logger unit (Z). During the detection of the information at each measuring point and its transfer to the computer, the processing station from which the information is taken, is known already (Claim 2). Therefore, if a defect is detected, the resulting signal is already individualised, so that it cannot be stated that document D5 comprises a yarn quality monitoring means in the meaning of the impugned patent, since as already explained before, there is a clear difference between a system knowing from which processing station each defect signal is coming (document D5) and a system which transfers all defect signals in such a manner that it is unclear from which specific processing station they originate (impugned patent).

The mere fact that a serial data transfer takes place along data line 16 does not imply that the monitoring means does transfer signals without knowing from which processing station they originate (non-individualised signals).

3.3 After examination of the other cited documents the Board comes to the conclusion that none of them discloses a monitoring system or a method of monitoring having all the features as defined in Claim 1 or Claim 3.

The subject-matter as set forth in both Claims 1 and 3, therefore, is to be considered novel within the meaning of Article 54 EPC.

4. Closest prior art

In the impugned patent (and in the pre-characterising portion of Claim 1), a specific existing monitoring system having two commonly known independently operating and differing monitoring means (cf. Figs. 1 and 2) has been defined as the closest prior art.

The use of these separate and independently operating monitoring means takes into account their known advantages and disadvantages. It is a choice the person skilled in the art has to make right from the beginning when planning a textile processing machine and its monitoring system.

The Board therefore is reluctant in this particular case, to start, in order to assess the inventive step, from another state of the art. Indeed, by taking another starting point the situation with respect to the claimed system becomes bizarre and without any relation to the existing specific system and its specific problems.

5. Problem and solution

5.1 The closest prior art permits the reception of information about the way the processing stations work and about the quality of the produced yarn. However, although the information given by the condition monitoring means can be attributed to each of the corresponding stations, the signals indicating that a defect is detected at one of these stations cannot be attributed to the originating station, since these defect signals are simply collected and summed up without any consideration of their origin.

This disadvantage is accepted as a result of the choice made at the stage of conception of the textile processing machine.

5.2 The problem to be solved therefore is to provide a monitoring system for a textile processing machine permitting the increase of the quantity and usefulness of information which can be extracted from the system.

5.3 The problem is solved by providing means which are responsive to the condition monitoring means and to the quality monitoring means and which are adapted to associate said defect signal with one of said stations.

By this means, allocating the defect signal to an individual processing station becomes possible, so that more precise information becomes available.

5.4 The solution is based upon the recognition that if the condition monitor is already able to identify the individual station out of operation, then it is no longer essential that the quality monitor likewise delivers the same degree of identification precision, since the interruption of the operation of the station following the detection of a quality defect will at any rate be automatically registered in the condition monitoring system. Therefore, the quality defect signal can be correlated with an individualised break signal (condition) issued by a particular processing station causing interruption of that station's operation.

6. Inventive step

6.1 If a skilled person tries to get more information from the monitoring means, particularly an individualised information relating to defects, it is obviously possible

to modify the whole system in such a manner that two analog monitoring means are used (duplication), one for the current operating condition and one for detecting defects, which both give an individualised information for each processing station as it is made by the condition monitoring means according to the closest prior art. This seems, according to the Board, the most logical solution, since if a skilled person wants individualised information he will use known systems providing him with such information. The use of a system providing non-individualised information is a positive choice, which willingly takes into account the mentioned disadvantage. Avoiding that disadvantage means taking another system.

6.2 Since document D6 (cf. above section 3.1) describes already the use of individualised information for each processing station, there is an indication neither to the present problem to be solved (cf. above section 5.2) nor to features enabling the claimed solution. The fact that the same kind of final information is available in document D6 (cf. Table 3 on page 17) only shows that different solutions are possible but does not give any information relating to the specific claimed solution.

6.3 Document D5 (cf. above section 3.2) describes a method of transferring information from measuring stations to a computer. Since document D5 teaches how information which is known to be generated by a specific measuring station (individualised information) can be transferred to the computer, there is no link whatsoever with the present problem to be solved, since due to that individualised information it is no longer needed to combine an already individualised information with another non-individualised information in order to allocate the latter information to a specific processing station.

The presence of a flip-flop element (cf. Claim 11 and AND-gates (G)) in each measuring station in order to allow the transfer of all measured information (of all measured parameters) to the computer, has no relation either with the present problem to be solved or with the features needed to solve that problem, since the information present at the measuring station (according to document D5) can only be transferred knowing which station is involved (cf. Claim 2) so that a completely different situation to that occurring in the impugned patent is present. Furthermore the AND-gate (G) present in document D5 cannot be compared with a time window needed in the embodiment according to the impugned patent, since in the latter two information signals are put together, the one individualised and the other non-individualised, whereas in the former only one information input (A) is present which is moreover already indivisualised.

A person skilled in the art finds in document D5 a possibility to transfer already individualised information to a computer, but he does not find a way to combine non-individualised information with individualiseds information, so that the combined information can be allocated to a specific processing station.

6.4 With respect to the other documents which were not thoroughly discussed any more during the oral proceedings, the following can be stated:

6.4.1 Document D1 discloses an apparatus allowing the storage of information knowing that it results from a specific processing station. No single indication or suggestion can be found in document D1 relating to the specific problem to be solved or to the claimed features needed to solve that problem.

6.4.2 Document D2 discloses a system to accumulate totalised data in independent counters so that it is not possible to single out data for one particular processing station. No indication or suggestion can be found in document D2 to the specific problem to be solved, let alone to the features to solve such a problem.

6.4.3 The remaining cited prior art documents do not come closer to the impugned patent than the documents already discussed before.

6.4.4 No indication or suggestion is given in all these documents to use the presence of an already individualised information signal to allocate another non-individualised information signal to a specific processing station, so that it cannot be obvious to come to the claimed solution when taking into account the cited documents. Neither is it suggested in these documents that the occurrence of the effect giving rise to the non-individualised information has a direct effect on the parameters giving rise to the individualised information, so that a person skilled in the art cannot be led by the content of these documents to solve the above specified problem in the claimed manner.

6.5 Document D7, which was presented for the first time a short while before the oral proceedings, that is to say after the end of the time limit for opposition, has been considered by the Board. As said document does not contain matter which could be essential to modify the appreciation of the inventive step in the subject-matter of the claims, the Board decided to apply Article 114(2) EPC and, as communicated to the parties during the oral proceedings not to introduce said document in the appeal proceedings.

6.6 The subject-matter of each of Claims 1 and 3 therefore involves an inventive step within the meaning of Article 56 EPC.

7. The subject-matter of each of Claims 1 and 3 is therefore patentable within the meaning of Article 52 EPC, so that based on these allowable Claims 1 and 3, and dependent Claim 2 which concerns a preferred embodiment of the system according to Claim 1, the description and the drawings as granted, the patent may be upheld.

Order

For these reasons, it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

N. Maslin C. Andries

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