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D E C I S I O N
of 27 October 1994

Case Number: T 0224/92- 3.2.5

Application Number: 86104171.3

Publication Number: 0196090

IPC: B65H 63/00

Language of the proceedings: EN

Title of invention:

Monitor of abnormality in a yarn winding apparatus

Patentee:

TEIJIN SEIKI CO. Ltd.

Opponents:

- (01) W. Schlafhorst & Co.
(02) Maschinenfabrik Rieter AG

Headword:

-

Relevant legal provisions:

EPC Art. 56

Keyword:

"Inventive step (yes, after amendment)"

Decisions cited:

-

Catchword:

-



Case Number: T 0224/92 - 3.2.5

D E C I S I O N
of the Technical Board of Appeal 3.2.5
of 27 October 1994

Appellant: W. Schlafhorst & Co.
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Representative: -

Other party: Maschinenfabrik Rieter AG
(Opponent) CH-8406 Winterthur (CH)

Representative: Walker, Victor
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Respondent: TEIJIN SEIKI CO. Ltd.
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office given on 26 November 1991,
posted on 17 January 1992 rejecting the opposition
filed against European patent No. 0 196 090
pursuant to Article 102(2) EPC.

Composition of the Board:

Chairman: C. V. Payraudeau
Members: A. Burkhart
M. H. M. Liscourt

Summary of Facts and Submissions

I. The Appellant (Opponent 2) lodged an appeal against the decision of the Opposition Division by which the Opposition against the European patent No. 0 196 090 had been rejected pursuant to Article 102(2) EPC.

The documents E1 (DE-A-3 005 746) and E2 (EP-A-0 083 731 corresponding to US-A-4 458 849) referred to in the Reasons for the Decision of the Opposition Division are also relevant to the present decision.

II. Oral proceedings were held before the Board.

(i) The Respondent (Patent Proprietor) submitted at the oral proceedings amended Claims 1 to 11 and an amended description adapted to the new claims.

(ii) The amended Claim 1 reads as follows:

"1. An apparatus for monitoring abnormality in a yarn winding apparatus, comprising means (12) for presetting a basic value of a winding factor, means (7) for detecting a present value of said winding factor, and means (11) for comparing said present value of said winding factor detected by said winding factor detecting means (7) with said basic value set by said value presetting means (12), said apparatus being characterised by means (8, 9, 10) generating signals relating to the change of the pattern of the winding factor; by a data memorizing circuit (14) for storing previously input data relating to the change of the pattern of the winding factor upon occurrence

of various kinds of abnormalities in the winding apparatus and by a decision circuit (13) comprising a central processing unit matching the signals from said signal generating means (8, 9, 10) relating to the change of the pattern of the winding factor with the signals input from the data memorising circuit (14) and determining the kind of abnormality, when said detected present value of said winding factor as determined by comparison in said comparing means (11) exceeds and acceptable range of values set with respect to said basic value, and means (18) for emitting an alarm signal in accordance with the determined abnormality."

(iii) The Appellant declared that he no longer objected against the amended Claim 1, since the obscure and broad expression "means for discriminating a change in a pattern of said winding factor" of Claim 1 of the patent as granted had now been replaced by a more detailed definition of the respective means, such that the subject-matter of the amended Claim 1 could be clearly distinguished from the prior art devices. He also admitted, that the subject-matter of the amended Claim 1 was new and was not suggested by the prior art.

(iv) The Respondent submitted that a basis for the amended Claim 1 could be found in the description on column 6, lines 42 to 46 and on column 7, lines 12 to 15 of the patent as granted and that the documents E1 and E2 did not render obvious the subject-matter of Claim 1.

(v) The Respondent requested that the decision under appeal be set aside and the patent be maintained in amended form on the basis of the amended Claims 1 to 11 and the amended description submitted during the oral proceedings and the drawings of the patent as granted.

(vi) The Appellant requested that the European patent be maintained in amended form as requested by the Respondent.

Reasons for the Decision

1. Amendments

The subject-matter of the amended Claim 1 is disclosed in Claims 1 and 2; on page 9, second paragraph; on page 10, second paragraph; on page 11, line 12; on page 13, line 22 and on page 16, lines 30 and 31 of the originally filed application documents.

The subject-matter of the amended Claim 2 is disclosed in the originally filed Claim 2.

With respect to Claim 1 of the granted patent the amended Claim 1 is restricted in scope in the sense that the general expression "means for discriminating a change in a pattern of said winding factor" has been replaced by a more detailed definition of the respective discriminating means whereas no technical feature has been deleted.

The description has been adapted to the amended claims and a prior art discussion has been inserted into the description.

Therefore, the amendments of the description and of the claims are not subject to an objection under Article 123(2) and (3) EPC.

2. *Novelty*

2.1 The subject-matter of the present Claim 1 of the patent in suit concerns an apparatus capable of detecting and monitoring certain abnormalities which can occur during the yarn winding operation, such as deformation or inward movement of the package, ribboning or unevenness in wound yarn quality (see column 3, line 52 to 58 of the granted patent), and comprises to this end:

- means for generating signals relating to the change of the pattern of a winding factor;
- a data memorising circuit for storing previously input data relating to the change of the pattern of the winding factor upon occurrence of various kinds of abnormalities in the winding apparatus; and
- a decision circuit comprising a central processing unit matching the signals from said signal generating means with the signals input from the data memorising circuit and determining the kind of abnormality.

2.2 Document E1 discloses a system for surveying a yarn processing machine wherein an alarm is activated in case a surveyed process parameter, like the yarn tension, lies beyond predetermined limit values. However, the variations of said process parameters are not detected.

2.3 Document E2 discloses a safety device for a winding apparatus wherein the actual value of a winding factor is detected and compared with a preset minimal value for this factor to emit a stop signal for the driving motor when the detected value is larger than the said minimal value by at least a predetermined allowance.

2.4 Thus, none of the documents E1 and E2 discloses a system for surveying a yarn processing machine according to which a change in the pattern of the winding factor is detected and compared with a reference pattern in order not only to determine whether the winding is occurring normally or not but also to determine, in this latter case, the kind of abnormality which occurred.

2.3 The apparatus which is the subject-matter of Claim 1 is therefore novel in the presence of the cited prior art.

3. *Inventive step*

3.1 As indicated in the preamble of the description of the patent in suit, in the known winding apparatus, when, for example, the variations of the pressing force or tension in the wound yarn are not large enough to break the yarn, the winding operation is normally continued. The defective package may include a portion temporarily subjected to deformation of ribboning or inward movement due to excess variations of pressing force. The defective package may also include a portion temporarily subjected to hunting. Since such a defective package is difficult to be detected by visual inspection, it is normally transferred to the subsequent process step with the consequence that the final product is defective (see column 1, line 47 to column 2, line 9 of the granted patent).

- 3.2 The apparatus according to Claim 1 of the patent in suit solves this problem by detecting the kind of the abnormalities which occur during the winding of the yarn packages, thus allowing the operator to remedy quickly to such abnormalities and to remove the defective packages so that they are not transferred to the subsequent operation step.
- 3.3 The system disclosed in the document E1, considered as representing the state of the art nearest from the invention, issues an alarm when a given winding parameter such as the yarn tension, lies beyond a predetermined value. This draws the attention of the operator who must then stop the machine and examine the spool in order to determine if the kind of abnormality is such that the spool has to be rejected as inappropriate for further processing. Moreover, abnormalities which do not involve the crossing of the threshold but could lead to a defective package are not detected.
- 3.4 The person skilled in the art who would try improving the system disclosed in the document E1 would not find in the document E2 which discloses a system analogous to the system of the document E1 any suggestion to the solution of the problem.
- 3.5 Thus, none of the cited documents discloses or suggests using the variations of the pattern of a winding factor to detect the different kinds of faults, while they are occurring and to identify them by a comparison with stored pattern variations. It is not even suggested that a special pattern of the winding factor could correspond to a given type of abnormality in the spooling operation.

- 3.6 Consequently the subject-matter of Claim 1 is not obvious for the skilled person and satisfies therefore the conditions of Article 56 EPC.
4. The same applies to the special embodiments of the subject-matter of Claim 1 according to the dependent Claims 2 to 11.
5. The description has been amended to correspond to the amended Claim 1 so that the patent and the invention to which it relates meet the requirements of the EPC. The patent can thus be maintained in amended form as requested.

Order

For these reasons it is decided that:

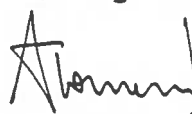
1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to maintain the patent in amended form on the basis of the following documents:

Description: column 1 to 14, line 10, as filed on 27 October 1994 including the passage to be inserted column 3, line 43;

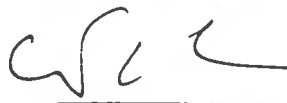
Claims: No. 1 to 11, as filed on 27 October 1994 and

Drawings: Figures 1 to 6 of the patent as granted.

The Registrar:


A. Townsend

The Chairman:


C. Payraudeau