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D E C I S I O N
of 1 April 2003

Case Number: T 0340/01 - 3.2.7

Application Number: 91918586.8

Publication Number: 0556212

IPC: B65H 54/28

Language of the proceedings: EN

Title of invention:
Thread package building

Patentee:
FREEMAN, James Edward

Opponent:
W. SCHLAFHORST AG & Co

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56, 123(2)

Keyword:
"Added subject-matter - (yes, first auxiliary request)"
"Novelty - (no, main request - yes, second auxiliary request)"
"Inventive step - (yes - second auxiliary request)"

Decisions cited:
G 0010/91

Catchword:
-

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Case Number: T 0340/01 - 3.2.7

D E C I S I O N
of the Technical Board of Appeal 3.2.7
of 1 April 2003

Appellant: (Opponent)
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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted 24 January 2001 rejecting the opposition filed against European patent No. 0 556 212 pursuant to Article 102(2) EPC.**

Composition of the Board:

Chairman: A. Burkhart
Members: H. E. Felgenhauer
J. H. P. Willems

Summary of Facts and Submissions

I. The appellant (opponent) filed an appeal against the decision of the Opposition Division rejecting the opposition with respect to European patent No. 0 556 212.

The opposition was filed against the patent as a whole based on the grounds of opposition according to Article 100(a) EPC (lack of novelty and inventive step).

The opposition division held that the grounds for opposition did not prejudice the maintenance of the patent as granted.

From the documents introduced into the opposition proceedings documents

D1: DE-B-26 49 780 and

D6: DE-A-24 58 853

were considered in the appeal proceedings.

II. Oral proceedings before the Board of Appeal were held on 1 April 2003.

(i) The appellant requested that the decision under appeal be set aside and that the patent be revoked.

(ii) The respondent (patent proprietor) requested that the appeal be dismissed (main request), or, alternatively, that the decision under appeal be

set aside and the patent be maintained in amended form on the basis of sets of claims, filed as first and second auxiliary requests on 26 October 2000.

Claim 1 according to the main request (i.e. claim 1 as granted) reads as follows:

"1. A method for building thread (11) on a rotating package (12) by traversing the point of application of the thread axially relatively to the package, characterised by controlling package build by controlling the relationship between package rotation and traversing rate by a feedback arrangement controlling package rotation."

Claim 1 according to the first auxiliary request reads as follows:

"1. A method for building thread (11) on a rotating package (12) by traversing the point of application of the thread axially relatively to the package, characterised by controlling package build by controlling the relationship between package rotation and traversing rate by a feedback arrangement controlling package rotation in accordance with the instantaneous position of the said point of application."

Claim 1 according to the second auxiliary request reads as follows:

"1. A method for building thread (11) on a rotating package (12) by traversing the point of application of the thread axially relatively to the package,

characterised by controlling package build with control means (19) by controlling the relationship between package rotation and traversing rate in accordance with the instantaneous position of the said point of application by a feedback arrangement controlling package rotation and traverse rate, wherein the control means comprises an electronically controlled servo actuator (18, 48) in which an error signal in a feedback loop adjusts the actuator's response to counteract operational loadings to which the actuator is subjected."

III. The appellant argued essentially as follows:

(i) The method according to claim 1 of the main request lacks novelty with respect to document D1. Assessing novelty with respect to the method according to claim 1 it needs to be considered that within the relationship between package rotation and traversing rate referred to, the term traversing rate is not clearly defined. Depending on the understanding of the expression "traversing rate" as a dimensionless number or as the velocity during the stroke of a thread guide this relationship can either be regarded as being dimensionless or having the dimension of a velocity.

Furthermore with respect to controlling the relationship between package rotation and traversing rate the control criteria for this control remains undefined. Thus claim 1 only defines that this relationship is controlled via a feedback arrangement controlling package rotation.

Consequently the method according to claim 1 requires as a prerequisite for the relationship between package rotation and traversing rate being controlled, that such a relationship exists in a controllable manner and that this relationship is controlled by a feedback arrangement controlling package rotation.

Document D1 discloses, as can be derived from Figure 2, a method of building thread on a rotating package within which the relationship between package rotation and traversing rate not only merely exists but effects the whole method in two ways. According to one way a value for the winding ratio reflecting the relationship between package rotation and traverse rate is entered in one of the two equations governing the method. Thus depending on the actual package rotation a predetermined value for the winding ratio is entered into the equation determining the traverse rate as traverse speed of the thread guide. According to the other way the two governing equations concerning the determination of the traversing rate and the package rotation are linked in that the predetermined traverse rate calculated via one of these equations is introduced into the other equation for the computation of the package rotation.

Since furthermore according to document D1 the relationship between package rotation and traverse rate is controlled by a feedback arrangement controlling package rotation the method of claim 1 lacks novelty with respect to document D1.

(ii) Within claim 1 according to the first auxiliary request it is defined that the feedback arrangement controlling package rotation is in

accordance with the instantaneous position of the point of application. Since such a feedback arrangement extends beyond the content of the application as filed, this claim 1 is inadmissible since it does not satisfy the requirement of Article 123(2) EPC.

(iii) Claim 1 according to the second auxiliary request does not satisfy the requirement of Article 123(2) EPC since within the application as filed it is not disclosed that the relationship between package rotation and traversing rate is controlled in accordance with the instantaneous position of the point of application by a feedback arrangement controlling package rotation and traverse rate.

The method according to this claim 1 further lacks novelty since within the method according to document D1 likewise a feedback arrangement controlling both, the package rotation and the traversing rate, the latter having to be understood as traversing speed, is provided, as can be derived from Figure 2, and since furthermore by this feedback arrangement the relationship between package rotation and traversing rate is controlled at any time and thus consequently also in accordance with the instantaneous position of the point of application.

The method according to this claim 1 furthermore does not involve an inventive step. According to document D6 within an apparatus for building thread, package rotation is controlled in accordance with the instantaneous position of the point of application, in that a friction roller segment movable with the point

of application cooperates with corresponding segments of a rotating element which supports and drives a package being coneshaped. The apparatus according to document D6 thus enables in an advantageous manner yarn being uniformly fed into the apparatus in the case of packages having to be coneshaped. Consequently it is obvious that starting from the method according to document D1, in case coneshaped packages are to be formed, the apparatus according to document D6 will be considered to achieve uniform feeding of yarn. Such consideration will lead to the friction roller used within the method according to document D1 being replaced by the driving arrangement according to document D6, leading to the relationship between package rotation and traversing rate being controlled in accordance with the instantaneous position of the point of application. Consequently claim 1 according to the second auxiliary request does not involve an inventive step in view of documents D1 and D6.

IV. The respondent argued essentially as follows:

(i) The method according to claim 1 of the main request is new with respect to document D1.

Having regard to claim 1 it needs to be considered that within this claim it is clearly defined that it is the relationship between package rotation and traversing rate which is controlled, and that this control is by a feedback arrangement controlling package rotation. It is apparent for the person skilled in the art that the traverse rate referred to can be classified as either relating to an average value or to an instantaneous one. Likewise it is apparent for the person skilled in the art that the relationship can be classified as

being a dimensionless value or one having the dimension of speed. Moreover the general method disclosed by claim 1 functions and thus needs to be considered independently of such classifications.

Furthermore, since it is clearly defined that the relationship between package rotation and traversing rate is controlled, which requires that such a controllable relationship exists, and since it is clearly defined how the control is performed, namely by a feedback arrangement controlling package rotation, no further criteria for the manner in which the relationship is controlled need to be defined in claim 1.

Within document D1 the governing equations for the method for building thread disclosed in this document are given and it is shown how these equations are derived. Since these equations comprise errors the person skilled in the art, becoming aware of these errors, would have disregarded this document.

However even if this document is considered and if it is taken into account that according to this document both package rotation and traversing rate are controlled by a feedback arrangement controlling package rotation and also traversing rate the method according to claim 1 differs from the known method in that the relationship between package rotation and traversing rate is controlled. Such a control requires that an appropriate linkage between the two entities of the relationship to be controlled, namely the package rotation and the traversing rate, exists. Such a linkage is not provided for the method according to document D1 since, in particular if the erroneous

equations are taken into account, only a weak linkage is given between the two governing equations and thus between the package rotation and the traversing rate.

Furthermore according to document D1 it is not the package rotation which is controlled by a feedback arrangement but the rotation of a friction roller by means of which the package is driven. Thus contrary to the method according to claim 1, slippage between the friction roller and the package driven by this roller can occur.

The method according to claim 1 is thus distinguished from the one according to document D1 and thus novel.

(ii) The feature of claim 1 of the first auxiliary request, stating that the feedback arrangement controlling package rotation is in accordance with the instantaneous position of the point of application, does not lead to this claim having a meaning which differs from the one of a claim derived by combining claims 1 and 2 as granted. The combination of features of claim 1 of the first auxiliary request is furthermore disclosed in the application as filed if, as required, the disclosures relating to individual features are considered in their proper context.

(iii) Claim 1 of the second auxiliary request satisfies the requirement of Article 123(2) EPC since within the application as filed it is directly and unambiguously disclosed that the relationship between package rotation and traversing rate is controlled in accordance with the instantaneous position of the point of application by a

feedback arrangement controlling package rotation and traverse rate.

According to this claim 1 the manner in which the relationship between package rotation and traversing rate is controlled is further defined in two aspects. According to the first aspect it is defined that this relationship is controlled in accordance with the instantaneous position of the point of application, which e.g. requires that the instantaneous point of application is sensed. According to the second aspect the relationship is controlled by a feedback arrangement which, in addition to package rotation, also controls the traverse rate. Due to reference to the instantaneous position of the point of application, the traverse rate relating to the motion of this point, needs to be considered in this case as referring to the traverse velocity.

The main difference between the method according to claim 1 of the second auxiliary request and the method according to document D1 can be seen in the fact that within the method according to claim 1, due to the relationship between package rotation and traversing being controlled in accordance with the instantaneous position of the point of application, account is taken of the instantaneous position of the point of application within each stroke of the point of application. On the contrary within the method according to document D1 the rotation of the friction roller and the traversing rate are controlled, without the instantaneous position of the point of application being accounted for.

Concerning document D6 it is not apparent that the

person skilled in the art, in order to improve the method according to document D1, would have considered this document. Even by doing so combination of these two documents would not have led to the method according to claim 1 of the second auxiliary request. Document D6 discloses a friction drive, comprising a rotating element supporting and driving a coneshaped package. The rotating element comprises segments, which when driven act as a friction roller driving the package. These segments themselves can be driven by a friction roller segment which has about the width of one of the segments and is movable with the point of application. Thus, due to the given width of the segments, the fixed arrangement of the segments and their cooperation with the friction roller segment in a predetermined manner, document D6 cannot be considered as leading to a control which is in accordance with the instantaneous position of the point of application. Consequently the subject-matter of claim 1 of the second auxiliary request involves an inventive step with respect to the combination of documents D1 and D6.

Reasons for the Decision

1. *Main request*

1.1 Ground of opposition according to Article 100(c) EPC

The ground of opposition according to Article 100(c) EPC was raised for the first time within the appeal proceedings with letter of 12 March 2002. The respondent does not consent to this ground of opposition being dealt with. Consequently this ground of appeal is not subject of the appeal proceedings (see

decision G 10/91).

1.2 Novelty

Claim 1 defines that within a method for building thread on a rotating package by traversing the point of application of the thread axially relatively to the package, the relationship between package rotation and traversing rate is controlled and that this control is by a feedback arrangement controlling package rotation.

Concerning the nature of the relationship defined in claim 1 the Board follows the opinion of the respondent according to which the term "traversing rate" can either be considered as referring to an average value or to an instantaneous one having the consequence, that in the first case the relationship is dimensionless, while in the latter case it has the dimension of speed, since the method of claim 1 is applicable in either case.

Concerning the manner or the criteria under which this relationship is controlled, the Board likewise follows the opinion of the respondent, that beyond the definition given within this claim, no further condition concerning control of this relationship needs to be considered. The reason being that, as indicated above, within claim 1 it is defined that a relationship, likewise defined in this claim, is controlled and that furthermore it is indicated in which manner the control is performed, namely by a feedback arrangement controlling package rotation.

Novelty of claim 1 thus can be assessed considering the features defined in this claim, without a further

definition with respect to the nature and the control of the relationship having to be considered.

According to the respondent document D1 should be disregarded since some of the equations given in this document are erroneous, thus preventing the person skilled in the art from considering this document.

The Board cannot follow this reasoning since the equations given in document D1 set the variables employed in relation, on the basis of mathematical principles (cf. D1, column 6, lines 36 to 50). Thus for the person skilled in the art the errors in some of the equations are evident and, using generally known mathematical principles, likewise the correct equations are evident. The same conclusion can be drawn considering the statement of Mr P. Bowler, filed by the respondent with letter of 28 February 2003. In this statement, with respect to the patent in suit, it is indicated that the required relations between traverse rate, yarn speed, tension and package diameter can be calculated using well known mathematical relationships (cf. paragraph 4). Considering that the person skilled in the art has the same skills with respect to document D1 it is evident that the erroneous equations could not have led to this document being misunderstood or even disregarded.

It remains undisputed that if this document is considered, document D1 discloses the method according to the first part of claim 1. This can be derived e.g. from Figure 2.

According to the respondent the method according to claim 1 differs in two aspects from the method

according to claim 1.

At first, according to claim 1 the relationship between package rotation and traversing rate is controlled. Consequently the two entities leading to the relationship, namely the package rotation and the traversing rate, need to be linked. The Board cannot follow the argument of the respondent that for the method according to document D1 such a linkage is not provided. One reason being that, as indicated above, the person skilled in the art considers document D1 in context with correct governing equations and not ones - as alleged by the respondent - which comprise errors. More importantly it is evident from Figure 2 that the two portions of the control, one concerning package rotation via a friction roller (elements 37, 32, 33, 29, 28, 10, 11) and the other one concerning the traversing rate (elements 38, 34, 35, 39, 40, 31, 30, 16, 17), are closely linked in that the predetermined value for the traversing rate enters the control of the package rotation. This is also evident considering equation (9) (column 7, line 31) from which it can be derived that traversing rate and package rotation are related.

Secondly, the method of claim 1 differs from the one according to document D1 with respect to the feedback arrangement, which, according to claim 1 controls package rotation while the one according to document D1 controls a friction roller. Thus the package rotation is not controlled directly which can lead to inaccuracies resulting from possible slippage between the friction roller and the package to be driven.

This argument cannot be considered in the examination

of novelty since the last feature of claim 1 does not define that package rotation is controlled directly. This holds true the more as according to the embodiment shown in Figure 4 of the patent in suit (cf. column 4, lines 29 to 33) the package is also rotated via a friction roller. Since within claim 1 it is not defined that package rotation is without slippage, the question of whether slippage can affect the control in case of the package being driven by a friction roller has to be disregarded in the assessment of novelty.

Consequently the method according to claim 1 is not distinguished from the one according to document D1 and thus lacks novelty in the sense of Article 54 EPC.

Therefore, the main request of the appellant is not allowable.

2. *First auxiliary request*

2.1 Amendments

Claim 1 according to the first auxiliary request differs from claim 1 as granted in that the last feature of this claim, according to which a feedback arrangement controlling package rotation is provided is modified, defining that this feedback arrangement controls package rotation in accordance with the instantaneous position of the point of application.

Contrary to the opinion of the respondent claim 1 according to the first auxiliary request is not the result of a mere combination of claims 1 and 2 as granted. If this were the case it would be the relationship between package rotation and traversing

rate which is controlled in accordance with the instantaneous position of the point of application and not the package rotation as it is the case according to claim 1.

With respect to the disclosure of the feature according to which a feedback arrangement controls package rotation in accordance with the instantaneous position of the point of application, the respondent has in particular referred to the portions of the description of page 5, first paragraph, page 6, first paragraph, page 7, paragraph 2 and page 8, first paragraph, indicating that the description and its various portions need to be seen in their proper context. Considering the various portions of the description, of which the one of page 5, first paragraph indicates that, as defined in claim 2 as granted the relationship between package rotation and traversing rate is controlled in accordance with the instantaneous position of the point of application as such, and also in context with the remainder of the description, the Board cannot find the feature added to claim 1, according to which the feedback arrangement controlling package rotation acts in accordance with the instantaneous position of the point of application, within the content of the application as filed. Consequently, since the application as filed does not directly and unambiguously disclose the feature added to claim 1, this claim does not satisfy the requirement of Article 123(2) EPC.

Therefore, the first auxiliary request of the appellant is not allowable.

3. *Second auxiliary request*

3.1 Amendments

Claim 1 according to the second auxiliary request comprises the combination of features of claims 1, 2 and 11 as granted. Accordingly the feature of claim 1 as granted concerning the relationship between package rotation and traversing rate being controlled is supplemented by defining that this control is in accordance with the instantaneous position of the point of application and the feature relating to a feedback arrangement controlling package rotation is supplemented such that the feedback arrangement controls package rotation and traverse rate.

Since these amendments of claim 1 according to the second auxiliary request result from the combination of claims 1, 2 and 11 as granted, these amendments are not subject to examination with respect to Article 123(2) EPC.

According to further amendments this claim also comprises the features of claims 16 and 20 as granted. Although these claims relate to an apparatus, introduction of their features into claim 1 are admissible since within claim 1 these features define, in the same manner as is the case for the apparatus claims, the structure of the feedback arrangement. Besides these features are also disclosed in the application as filed (cf. page 8, last paragraph).

3.2 Novelty

According to the appellant the method according to claim 1 lacks novelty with respect to document D1. The reason being that according to this document the

feedback arrangement likewise controls the package rotation and the traversing rate and that consequently the relationship between package rotation and traversing rate is controlled at any time, which thus includes that the control is in accordance with the instantaneous position of the point of application.

Although the Board can follow this opinion with respect to a feedback arrangement controlling package rotation and traverse rate being used in the method according to document D1, the conclusion, that such a feedback arrangement results in the relationship between package rotation and traverse rate being controlled in accordance with the instantaneous position of the point of application, cannot be followed. It is out of the question that within the known method the control of package rotation and traverse rate effects the relationship at any time and thus also at any instantaneous position of the point of application. Such effects however come automatically, whereas on the contrary a control performed in accordance with the instantaneous position of the point of application requires that the instantaneous position is sensed and considered in controlling the relationship.

It is evident that the method according to document D1 does not take account of the instantaneous position of the point of application, in controlling the relationship between package rotation and traversing rate (cf. e.g. Figure 2). Thus claim 1 is novel in the sense of Article 54 EPC.

3.3 Inventive step

The method according to claim 1 differs from the one

according to document D1 in that the relationship between package rotation and traversing rate is controlled in accordance with the instantaneous position of the point of application.

This leads to the effect that, as can be derived from Figures 2 and 3 of the patent in suit, the traverse rate, as the velocity of the traversing point, can be controlled within the traverse stroke (cf. column 5, lines 35 to 52).

In view of the method according to document D1 the problem to be solved by the subject-matter of claim 1 can be seen in the provision of an improved control, according to which the traverse rate can be controlled within each traverse stroke.

This problem is solved by the method according to claim 1 in that the relationship between package rotation and traversing rate is controlled in accordance with the instantaneous position of the said point of application by a feedback arrangement controlling package rotation and traverse rate.

Within the method according to document D1 the instantaneous point of application is not accounted for and consequently this document fails to give an indication towards the solution according to claim 1.

Document D6 discloses an apparatus for building thread on a package, which is coneshaped and driven by a friction roller. According to this document thread building on coneshaped packages poses problems in case of thread being fed with uniform velocity. To alleviate these problems according to document D6 it is known to

drive the coneshaped package by means of a friction roller, which is in the form of a friction roller segment and coupled to the point of application of the thread (page 1, paragraph 2). To avoid a disadvantage of this approach, namely that the coneshaped package is only driven and supported in a narrowly defined area corresponding to the width of the friction roller segment, document D6 proposes provision of a rotating element, by means of which the package is supported and driven. In its longitudinal direction the rotating element is divided into a number of segments, which, depending on the position of the friction roller segment and thus also of the point of application coupled thereto, are driven by the friction roller segment (page 2, paragraphs 2, 3; page 3, lines 1, 2; Figures 1, 2). This driving mechanism for coneshaped packages leads to the package rotation being dependent on the position of the point of application, since the friction roller segment is coupled with the point of application.

The known thread building apparatus however neither results in controlling the relationship between package rotation and traversing rate in accordance with the instantaneous position of the point of application, nor suggests such control. The reason being that the coneshaped package is driven by a friction roller segment movable with the point of application in a predetermined manner, within which the instantaneous position of application is not sensed, and thus cannot affect the manner in which the relationship between package rotation and traversing rate is controlled. This holds true all the more because the only elements of the known friction drive which reflect the position of the point of application are the segments of the

friction roller and of the rotating element. By means of these segments however, due to their extensions in longitudinal direction, the instantaneous position of the point of application cannot be taken into account.

Consequently, since neither one of documents D1 and D6 leads to the solution according to claim 1, the method according to this claim involves an inventive step (Article 56 EPC). This applies correspondingly with respect to claim 10 according to the second auxiliary request, which defines an apparatus for building thread and corresponds, as far as structural features are concerned, to claim 1.

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:

   - Claims 1 to 14 filed as second auxiliary request on 26 October 2000

   - Pages 2 and 3 of the description as filed during the oral proceedings on 1 April 2003

   - Pages 4 and 5 of the description and Figures 1 to 5 as granted.

The Registrar: The Chairman:

D. Spigarelli A. Burkhart