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Datasheet for the decision of 13 June 2013

Case Number: T 0944/10 - 3.5.03

Application Number: 03737026.9

Publication Number: 1532499

IPC: G05B 19/418

Language of the proceedings: EN

Title of invention:
System and method for guiding a web in a web converting manufacturing process

Patent Proprietor:
Kimberly-Clark Worldwide, Inc.

Opponents:
The Procter & Gamble Company
SCA Hygiene Products AB

Headword:
Training pant/KIMBERLY-CLARK

Relevant legal provisions:
EPC Art. 56, 83, 123(2)

Keyword:
"Inventive step (second auxiliary request) - yes"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0944/10 - 3.5.03

D E C I S I O N
of the Technical Board of Appeal 3.5.03
of 13 June 2013

Appellant I: (patent proprietor)
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Decision under appeal:
Interlocutory decision of the opposition division of the European Patent Office posted 18 February 2010 concerning maintenance of European patent No. 1532499 in amended form.

Composition of the Board:

Chairman: F. van der Voort
Members: B. Noll
T. Bokor

Summary of Facts and Submissions

I. Two oppositions were filed against European patent No. 1532499. Both oppositions were based on the ground that the claimed subject-matter lacked novelty and inventive step (Article 100(a) EPC). The opposition filed by opponent 01 was additionally based on the ground that the European patent did not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 100(b) EPC).

II. In an interlocutory decision the opposition division held that, account being taken of the amendments made by the patent proprietor during the opposition proceedings, the patent and the invention to which it related met the requirements of the European Patent Convention.

III. Appeals against this interlocutory decision were filed by the patent proprietor (appellant I) and opponent 01 (appellant II).

Appellant I requested that the impugned decision be set aside and that the patent be maintained on the basis of one of a main request and two auxiliary requests, all as filed with the statement of grounds of appeal. Oral proceedings were conditionally requested.

Appellant II requested that the decision be set aside and that the patent be revoked. In addition to submitting arguments relating to the grounds for opposition, appellant II argued that the patent in the amended form as considered by the opposition division

to meet the requirement of the EPC extended beyond the content of the application as filed (Article 123(2) EPC).

With a letter filed in response to the appeal by the patent proprietor, opponent 02 (the respondent) requested that the appeal by the patent proprietor be rejected.

IV. With a letter dated 25 January 2011, appellant I filed, by way of replacement, revised sets of claims of a main request and six auxiliary requests.

V. In a communication accompanying a summons to oral proceedings, the board informed the parties that the appeals filed by appellants I and II would be considered in the same proceedings pursuant to Article 10(1) of the Rules of Procedure of the Boards of Appeal. The board further drew the parties' attention to issues to be discussed during the oral proceedings.

VI. Oral proceedings were held on 13 June 2013. In the course of the oral proceedings appellant I withdrew the six auxiliary requests as filed with the letter dated 25 January 2011 and filed amended sets of claims of first and second auxiliary requests. At the oral proceedings, *inter alia* the question of inventive step having regard to the disclosure of the document:

E18: WO 95/27462 A1

and taking into account the teaching of document:

E2: US 5,359,525 A

was discussed.

Appellant I requested that the decision under appeal be set aside and that the patent be maintained in amended form on the basis of claims 1 to 37 of the main request filed with letter dated 25 January 2011, or, in the alternative, on the basis of claim 1 of the first auxiliary request or claims 1 to 14 of the second auxiliary request, both as filed during the oral proceedings before the board.

Appellant II requested that the decision under appeal be set aside and that the patent be revoked.

The respondent requested that the appeal by appellant I be dismissed.

VII. Claim 24 of the main request reads as follows:

"A web guiding method, suitable for use in connection with a production line producing a composite product from a first web component combined with a second web component wherein the first and second web components are being provided to the production line, the method comprising:

capturing an image of the first and second components after combining said first and second web components; detecting in the captured image a placement of the first web component relative to the second web component; and

providing an inspection parameter indicative of the placement of the first web component relative to the second web component; wherein the first and second components are combined by a joining process resulting in an overlapping relationship between the first and second components, and wherein detecting in the captured image the placement of the first web component relative to the second web component comprises detecting an amount of overlap between the first web component and the second web component and wherein the inspection parameter indicates said amount of overlap; characterised by
obtaining a plurality of inspection parameters, each associated with one of a plurality of composite products;
determining a mathematical characteristic of the obtained plurality of inspection parameters;
comparing the mathematical characteristic to a target; and
selectively adjusting a drive set point associated with providing the first web component prior to combination with the second web component as a function of a difference between the mathematical characteristic and the target."

The sole claim of the first auxiliary request, which is identical to the claim the opposition division held to meet the requirements of the EPC, essentially differs from claim 24 of the main request in that in the third paragraph after the feature "providing an inspection parameter ... component;" the following wording is added:

"wherein the first web component is a first fastener component and the second web component is a second fastener component,".

Claim 1 of the second auxiliary request differs from the claim of the first auxiliary request in that the following wording is added:

"wherein said first and second fastener components are associated with side panel components of a pre-assembled training pant; and wherein said capturing an image is performed by lighting the fastener from inside of the pre-assembled training pant and taking an image with a camera located on the outside of the training pant".

Claims 2 to 14 of the second auxiliary request are all dependent on claim 1.

Reasons for the Decision

The appeals are admissible.

1. *The main request - inventive step (Article 56 EPC)*

1.1 Regarding claim 24 of the main request, the board considers E18 as representing the most relevant prior art for assessing inventive step.

E18 discloses a method of manufacturing a pre-assembled training pant (in E18 also called "pants-type diaper" or "sanitary panty", cf. page 1, lines 5, 6 and 16 to 18) which as regards its structure is substantially

equal to the training pant described in the present patent specification (cf. E18, Fig. 5 and the patent specification, Fig. 1). The production line as shown in Fig. 1 of E18 substantially corresponds to the production line as shown in Fig. 12 of the patent specification and is configured to produce a pre-assembled training pant as a composite product including first and second web components. The first and second components, i.e. fastener pieces 18, 19 constituting a fastener means 20 (E18, page 11, line 28 to page 12, line 10), are combined by a joining process (page 7, lines 18 to 28) resulting in an overlapping relationship between the first and second components, as illustrated in Fig. 5 of E18.

The fastener means 20 may be implemented as "adhesive applications that have a relatively large extension in the circumferential direction of the pant diaper and also in its height direction" (page 12, line 34 to page 13, line 5). At page 13, lines 5 to 17, which is specifically concerned with the fit of the training pant and the ability of being correctly fastened by the user, it is further stated that "it is particularly important with respect to the fit of the pant diaper that any deviations in the vertical position of the separate parts of said side parts are small". In the board's view, the skilled person would understand from these passages that the relative positioning of the fastener pieces 18 and 19, such that these pieces have a substantial amount of overlap after the training pant is pre-assembled, is a critical parameter as regards the quality of the training pant.

1.2 The web guiding method according to claim 24 differs from the method disclosed in E18 by the following steps:

capturing an image of the first and second components after combining said first and second web components;

detecting in the captured image a placement of the first web component relative to the second web component;

providing an inspection parameter indicative of the placement of the first web component relative to the second web component; wherein detecting in the captured image the placement of the first web component relative to the second web component comprises detecting an amount of overlap between the first web component and the second web component and wherein the inspection parameter indicates said amount of overlap;

obtaining a plurality of inspection parameters, each associated with one of a plurality of composite products; determining a mathematical characteristic of the obtained plurality of inspection parameters;

comparing the mathematical characteristic to a target; and

selectively adjusting a drive set point associated with providing the first web component prior to combination with the second web component as a function of a difference between the mathematical characteristic and the target.

1.3 Starting out from the training pant manufactured as disclosed in E18, the technical problem underlying the claimed subject-matter may therefore be seen in achieving and maintaining an overall high quality in the production of the pre-assembled training pant using

the production line shown in Fig. 1 of E18, thereby minimizing cull during production. The formulation of this technical problem was not contested by the parties.

Faced with the above technical problem, the person skilled in the art would consider E2, since this document discloses a method for sequentially inspecting composite articles, such as diapers, fabricated in series in a production line (E2, column 1, lines 7 to 32). More specifically, in order to achieve and maintain a high quality of the composite article, E2 discloses that an image of an article, which is produced by combining various components in a continuous web assembling process, is captured by a registration inspection apparatus 41 (E2, column 5, lines 34 to 38, and Fig. 1). The image is captured after the components constituting the article are combined (Figs. 1 and 2). E2 further discloses that that the placements of, and positional relationships between, various components of the article are detected (column 5, lines 54 to 58) and that respective inspection parameters indicative of the placement of respective components are determined, e.g. the machine direction position of tapes 39a-f (column 6, lines 13 to 16, and column 7, lines 48 to 54). Further, E2 discloses that a plurality of inspection parameters, each associated with one of a plurality of articles, is obtained and that a mathematical characteristic of the obtained plurality of inspection parameters is derived, e.g. a trend signal obtained by averaging position variance signals (column 7, lines 54 to 58). It is further stated that the "trend signals can be utilized to control one or more of the mechanisms which supplies the respective components to the fabrication line"

(column 7, lines 58 to 61). These passages thus disclose, in different words, the features in claim 24 according to which a mathematical characteristic is compared to a target and a drive set point associated with providing the first web component prior to combination with the second web component is adjusted as a function of a difference between the mathematical characteristic and the target.

The skilled person, starting out from a pre-assembled training pant as disclosed in E18 and faced with the above-mentioned technical problem, would have been led by the teaching of E2 to a method in which such positional parameters of components of the pre-assembled training pant which are essential for the product quality of the pant are detected by capturing an image thereof and evaluated for controlling the setting of the production line. Since the amount of overlap of the fastener pieces is a critical parameter of the pre-assembled training pant (cf. point 1.1 above), the skilled person would have monitored this amount of overlap accordingly and would thus have arrived at a method which includes all the features of claim 24 without the exercise of inventive skill.

1.4 Appellant I argued that there was no motivation in the prior art to detect the amount of overlap of components on a pre-assembled training pant. The inspection procedures known so far, e.g. the procedure disclosed in E2, were restricted to inspecting the relative position of only those components which were visible to the camera, i.e. components visibly arranged on the surface of the diaper facing the camera as disclosed in E2. It was argued that the system of E2 was not capable

of detecting an amount of overlap since this would have required detecting the position of a hidden component, whereas the system of E2 was not configured to detect hidden components.

1.5 The board is not convinced by this argument. Selecting an amount of overlap as a parameter which is to be monitored is determined by the recognition that certain product parameters are critical for the quality of the product. In the present case, E18 discloses that a substantial overlap of the fastener pieces is important (see point 1.1 above). Hence, considering the amount of overlap as a parameter to be monitored would have been obvious for the person skilled in the art. As regards the capability of the system of E2 to determine a "hidden" component, the board cannot see any substantial difference between the capturing of an image and the detection of a relative placement of the two in E2, on the one hand, and according to the method as claimed, on the other hand. Nor does the patent specification disclose any specific features for capturing an image of a "hidden" component. In other words, inasmuch as the present method as claimed is capable of detecting an amount of overlap between components by detecting the positional relationship between these components, the same applies to the system of E2.

1.6 The board concludes that the method of claim 24 lacks an inventive step (Article 56 EPC) and, hence, that the ground for opposition pursuant to Article 100(a) EPC prejudices the maintenance of the patent in amended form on the basis of the main request.

2. *The first auxiliary request - inventive step (Article 56 EPC)*

2.1 The feature added to the sole claim of the first auxiliary request (see point VII above) further specifies the first and second web components as being first and second fastener components. This feature is known from E18 in which the first and second components are a fastener element 13 and a glue bead 23, respectively (see also point 1.1 above).

2.2 Consequently, the subject-matter of claim 1 of the first auxiliary request lacks an inventive step for the same reasons as given in respect of claim 1 of the main request (see point 1 above).

2.3 The ground for opposition pursuant to Article 100(a) EPC therefore prejudices the maintenance of the patent in amended form on the basis of the first auxiliary request.

3. *The second auxiliary request*

3.1 *Basis for the amendments (Article 123(2) EPC)*

3.1.1 Claim 1 of the second auxiliary request is based on claims 26, 27 and 30 as originally filed (i.e. claims 25 and 28 as granted), claim 11 as originally filed (the first and second components are first and second fastener elements), and the following passages of the description (cf. the application published as WO 2004/014275): page 65, lines 12 to 16 (the association of the first and second fastener components with side panel components of a pre-assembled training

pant); and page 69, lines 10 to 13, in connection with page 38, lines 21 to 25 (the lighting is from inside the pre-assembled training pant).

Claims 2 to 14 respectively correspond to claims 28, 29 and 31 to 41 as originally filed, i.e. claims 26, 27 and 29 to 39 as granted.

3.1.2 In the statement of grounds of appeal and at the oral proceedings appellant II argued that the feature "the first web component is a first fastener component and the second web component is a second fastener component" was originally disclosed only in the context of the other features in originally filed claim 11, i.e. in connection with a vision inspection system, a communication network, an information exchange system and a drive system, and that there was no basis in the application as filed that the features could be considered separately.

3.1.3 The board does not agree. The feature in question relates to the pre-assembled training pant, namely that the first and second web components are first and second fastener components, whereas the remaining features in originally filed claim 11 relate to the various components of a system, namely the communication network, the information exchange system and the drive system. The board notes that appellant II did not argue that these features of originally filed claim 11 are technically so interrelated with the above feature of the training pant that they cannot be separated. Nor does the board see any reason for this proposition. Therefore, incorporating the above feature into claim 1, without incorporating all other features

of the system of originally filed claim 11, does not constitute an unallowable intermediate generalization.

3.1.4 The board concludes that the claims of the second auxiliary request meet the requirement of Article 123(2) EPC.

3.2 *Sufficiency of disclosure*

3.2.1 The objections raised by appellant II as to insufficient disclosure of the invention may be summarised as follows:

(a) The expression "mathematical characteristic" is indeterminate and includes an indefinite variety of mathematical characteristics. In the application as filed, only an average and a standard deviation were given as examples of the mathematical characteristic. Further, a corrective action on a drive set point could not be carried out solely on the basis of a standard deviation. Hence, it was left to the skilled person to find out which mathematical characteristic would be suitable for carrying out a proper corrective action on a drive set point.

(b) The patent specification did not provide a sufficient disclosure enabling the skilled person to detect an amount of overlap between the first web component and the second web component. A detection of this amount of overlap of the two web components was however difficult, since one of the components was not visible from the outside. Furthermore, an image captured from outside the pre-assembled training pant while lighting the training pant from the inside would

likely be fuzzy and, hence, not suitable to provide a reliable parameter for indicating the overlap. The patent in suit did not provide any disclosure as to how an amount of overlap could be reliably obtained from a fuzzy image.

3.2.2 The board is not convinced by these arguments for the following reasons:

Re (a): The board considers that in the field of the invention, i.e. fabrication process control, it is sufficient to indicate that a mathematical characteristic is derived from the inspection parameters, without exactly specifying this mathematical characteristic. The skilled person is able to find out which mathematical characteristic would best suit for the given purpose solely using common general knowledge on process control.

Re (b): In the board's view, the indication that the amount of overlap is detected by detecting in the captured image a placement of the first web component relative to the second web component in the captured image is, in the present context, sufficient for the purpose of sufficiency of disclosure, since detecting a placement of a component in an image was well known in the field of image analysis at the earliest priority date of the patent. As regards the further argument that an amount of overlap may not be detectable because the image would be fuzzy, the board does not see any reason why the image captured from a pre-assembled training pant lit from the inside according to the method as claimed would be more fuzzy than the image captured in Fig. 3 of E2. Further, there is no

fundamental problem apparent from E2 as regards the reliability of detecting in an image captured a placement of a component using the method of Fig. 3 in E2, and the board therefore does not see why such a problem would exist in the method as claimed.

3.2.3 The board therefore concludes that the ground for opposition pursuant to Article 100(b) EPC does not prejudice the maintenance of the patent in amended form on the basis of the second auxiliary request.

3.3 *Inventive step (Article 56 EPC)*

3.3.1 Regarding claim 1 of the second auxiliary request, the method as claimed differs from the method disclosed in E18 by the features identified at point 1.2 above and by the additional feature according to which the capturing of the image is performed by lighting the fastener from inside the pre-assembled training pant and taking an image with a camera located on the outside of the training pant.

3.3.2 These distinguishing features together contribute to providing a web guiding method which serves to detect the amount of overlap between the first and second fastener components and to adjust a drive set point in response.

3.3.3 Starting out from E18 and taking into account the teaching of E2, the skilled person would not have arrived at a method in which a fastener of a pre-assembled training pant is lit from inside the training pant and an image is taken with a camera located on the outside of the training pant, since E18 does not

disclose detecting an amount of overlap by capturing an image of the pre-assembled training pant, whilst E2 only discloses the capturing of an image of a composite article in which the article is lit from outside.

3.3.4 Appellant II and the respondent argued that the feature of capturing an image by lighting the fastener from inside the preassembled training pant and taking the image with a camera located outside, did not further distinguish the claimed method from the method of E2. Fig. 3 of E2 showed a configuration in which the light source was arranged below the article and, hence, lighted the article from a side thereof which would later become the inner side. Lighting a pre-assembled training pant from inside would lead to the same lighting conditions. Since there were very few possibilities for arranging the lighting, namely by making use of either reflected or transmitted light, the skilled person would have selected one of these possibilities and would have considered lighting a training pant from inside as being obvious.

3.3.5 The board does not agree. E2 discloses illuminating an article solely from outside, in which an image is captured by detecting either reflected light (Fig. 1) or transmitted light (Fig. 3). Although the person skilled in the art would consider the apparatuses of Figs. 1 and 3 of E2 to be suitable for inspecting a pre-assembled training pant, this in itself does not suggest lighting the training pant from the inside. This would also require modifying the apparatus disclosed in E2. Hence, the further argument that the lighting of a training pant from the inside would provide substantially the same lighting conditions as

in Fig. 3 of E2 as regards the transmittance of light through the material of the article may be correct, but is based on hindsight.

3.3.6 The method of claim 1 of the second auxiliary request is therefore not obvious having regard to the disclosure of E18 in combination with E2. Further, since claims 2 to 14 are dependent on claim 1, the same applies to the subject-matter of these claims.

3.4 Since the subject-matter of the claims of the second auxiliary request is held not obvious having regard to the disclosure of E2, the only prior-art document considered by the opposition division in detail in the decision under appeal, and since no other objection based on Article 100(a) EPC was raised either by appellant II or the respondent, the ground for opposition pursuant to Article 100(a) EPC does not prejudice the maintenance of the patent in amended form on the basis of the second auxiliary request.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance for further prosecution on the basis of the second auxiliary request filed during the oral proceedings.

The Registrar: The Chairman:

I. Aperribay F. van der Voort