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Datasheet for the decision of 17 June 2010

Case Number: T 0721/07 - 3.2.05

Application Number: 02010262.0

Publication Number: 1270480

IPC: B65H 45/09

Language of the proceedings: EN

Title of invention:
Method and apparatus for producing disposable worn article or garment

Patentee:
Zuiko Corporation

Opponent:
SCA Hygiene Products AB

Headword:
-

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

Relevant legal provisions (EPC 1973):
-

Keyword:
"Inventive step (main request, second to fourth auxiliary requests, no)"
"Added subject-matter (first and fifth to ninth auxiliary requests, yes)"

Decisions cited:
-

Catchword:

-

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Case Number: T 0721/07 - 3.2.05

D E C I S I O N
of the Technical Board of Appeal 3.2.05
of 17 June 2010

Appellant I: (Opponent)
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Decision under appeal:
Interlocutory decision of the Opposition Division of the European Patent Office posted 28 March 2007 concerning maintenance of European patent No. 1270480 in amended form.

Composition of the Board:

Chairman: W. Zellhuber
Members: P. Michel
E. Lachacinski

Summary of Facts and Submissions

I. Appellant I (opponent) and appellant II (patentee) both lodged an appeal against the interlocutory decision of the Opposition Division maintaining European patent No. 1 270 480 in amended form.

II. Oral Proceedings were held before the Board of Appeal on 17 June 2010.

III. Appellant I requested that the decision under appeal be set aside and that the patent in suit be revoked in its entirety.

Appellant II requested that the decision under appeal be set aside and that the patent in suit be maintained on the basis of the following documents:
Main Request: claims 1 to 17 of the patent in suit as granted; or
Auxiliary request I: claims 1 and 9 submitted as Auxiliary Request I on 22 August 2007; or
Auxiliary requests II to V: the sets of claims submitted as Auxiliary Requests 1 to 4, respectively, on 5 January 2007; or
Auxiliary request VI: claims 1 to 11, submitted as amended auxiliary request 4 during oral proceedings on 12 February 2007; or
Auxiliary requests VII to IX: the sets of claims filed as Auxiliary Requests 5 to 7, respectively, on 5 January 2007.

IV. Claim 1 of the main request reads as follows:

"1. A method for producing a disposable worn article (P), comprising the steps of:

placing an absorbent (C) on a surface of a web (W); folding the web (W) in two so that opposite side edges (WI, W2) of the web (W) are brought close to each other or laid on each other by a folding section (40);

detecting a reference portion of the web (W) in the folding section (40) or a reference portion of the folded web (W) to be used as a reference in the folding operation so as to generate positional information (SI) regarding a position of the detected reference portion;

correcting a path of the web (W) based on the positional information (SI) so that the opposite side edges (WI, W2) of the folded web are in a predetermined positional relationship with respect to each other;

bonding portions of the folded web (W) to each other so as to form a bonded portion; and

cutting the bonded web (W) along the bonded portion."

Claim 1 of auxiliary request I includes the additional feature as compared with claim 1 according to the main request:
"wherein the web (W) is folded into an orientation along a generally vertical plane"

Claim 1 of auxiliary request II includes the following additional feature as compared with claim 1 according to the main request:
"wherein the path of the web (W) is corrected by adjusting tensions that are applied on opposite side

edges (W1, W2) of the web (W) while the web (W) is being carried"

In claim 1 of auxiliary request III, the term "a reference portion" as used in claim 1 according to the main request is replaced by "the side edges".

Claim 1 of auxiliary request IV includes the following additional feature as compared with claim 1 according to auxiliary request III:
"wherein the path of the web (W) is corrected by adjusting tensions that are applied on opposite side edges (W1, W2) of the web (W) while the web (W) is being carried"

In claim 1 of auxiliary requests V and VI, the term "a reference portion of the web (W) in the folding section (40) or a reference portion of the folded web (W)" as used in claim 1 according to the main request is replaced by "a reference portion of the web (W) in the folding section (40) and a reference portion of the folded web (W)", and in claim 1 of auxiliary request VII, said term is replaced by "the side edges of the web (W) in the folding section (40) and the side edges of the folded web (W)".

Claim 1 of auxiliary request VIII includes the following additional feature as compared with claim 1 according to the main request:
"wherein the side edges (W1, W2) of the web (W) are detected at two spaced-apart locations including an upstream location and a downstream location before folding the web (W), and the path of the web (W) is corrected based on the positional information (S2, S1)

obtained from the upstream location and a downstream location"

In claim 1 of auxiliary request IX, the term "a reference portion" as used in claim 1 according to auxiliary request VIII is replaced by "the side edges".

V. The following documents are referred to in the present decision:

D5: US-A-5,711,832
D21: DE-A-1 944 633
D22: DE-A-2 031 363

VI. The arguments of appellant I in the written and oral proceedings can be summarised as follows:

The subject-matter of claim 1 according to the main request differs from the disclosure of document D5, which represents the closest prior art, by the features of detecting a reference portion of the web in the folding section or a reference portion of the folded web to be used as a reference in the folding operation so as to generate positional information regarding a position of the detected reference portion; and correcting a path of the web based on the positional information so that the opposite side edges of the folded web are in a predetermined positional relationship with respect to each other.

These features serve to overcome the problem as set out in paragraphs [0006] and [0007] and to achieve the object as set out in paragraph [0008] of the patent in suit.

The alternative solutions to this problem as specified in claim 1 are, however, known from documents D21 and D22 respectively. As illustrated in Figure 3d of document D21, when a deviation between the edges is detected by the sensors 7,8, the path of the web is corrected by opening and closing the pairs of rollers 5,6.

The provision of the adjustment device 16 for the rollers has nothing to do with the control process. Document D22 does not indicate that the method of document D21 should not be used: it is merely indicated that the method of document D22 is more suitable for elastic webs.

The subject-matter of claim 1 of the main request thus does not involve an inventive step.

The additional feature of claim 1 of the first auxiliary request, that the web is folded into an orientation along a generally vertical plane, is only disclosed in the application as filed in conjunction with the feature that the web is then twisted into another orientation.

There is no disclosure in the application as filed of a method in which a reference portion of the web anywhere in the folding section and a reference portion of the folded web at any location, including downstream of the folding section, are detected.

There is no disclosure in the application as filed of a method in which the side edges of the web are detected at two spaced-apart locations including an upstream

location and a downstream location before folding the web. The locations specified in claim 1 of auxiliary requests VIII and IX are locations which are spaced apart in the direction of movement of the web.

The amendments to claim 1 according to auxiliary requests I, V, VI, VII, VIII and IX thus do not comply with the requirements of Article 123(2) EPC.

The feature of correcting the path of the web by adjusting tensions that are applied on opposite side edges of the web while the web is being carried does not have any supplemental technical effect. The problem to be solved in connection with claim 1 of auxiliary requests II to IV is thus the same as for claim 1 of the main request and the solution to this problem is known from documents D21 and D22. The arrangement disclosed in these documents has the same effect as the arrangement of the patent in suit.

The subject-matter of claim 1 of auxiliary requests II, III and IV thus does not involve an inventive step.

VII. The arguments of appellant II in the written and oral proceedings can be summarised as follows:

Documents D21 and D22 relate to a different technology from that of document D5, so that the person skilled in the art would not consider a combination of documents D21 or D22 with document D5. In particular, documents D21 and D22 concern webs subject to variations in width, as illustrated in Figures 3b and 3c, as opposed to the manufacture of disposable worn articles. In order to

adjust the lateral position of the path of the web, hand wheels 16 are provided, as shown in Figure 2.

Document D22 teaches that the method of document D21 is a bad idea, so that the skilled person would not utilise the teaching of document D21. The technique of opening and closing pairs of rollers would not be applied in the field of disposable worn articles.

The person skilled in the art would thus not combine either of documents D21 and D22 with document D5, so that the subject-matter of claim 1 of the main request involves an inventive step.

The person skilled in the art reading the application as filed would appreciate that the step of folding the web as disclosed in paragraph [0026] of the application as filed is completely independent from the subsequent step of twisting the web.

A method in which a reference portion of the web in the folding section and a reference portion of the folded web are detected is disclosed in paragraphs [0043] to [0045] of the application as filed. Essentially, the web has two states, that is, folded and unfolded, which are fully equivalent to positions upstream and downstream of the contact member. References to the web alone refer to the unfolded web.

Claim 1 of auxiliary requests VIII and IX is merely a combination of claims 1 and 3 as filed. Insofar as it is suggested that three sensor positions are specified, it is noted that the preferred embodiment of the invention has four sensors.

The subject-matter of claim 1 of auxiliary requests I, IV, VI, VII, VIII and IX is thus disclosed in the application as filed.

In the arrangements disclosed in documents D21 and D22, the pairs of rollers open and close. In the open position, the web is not being carried. There is thus no suggestion that the tension is adjusted while the web is being carried. Further, the tension is only adjusted on one side.

The subject-matter of claim 1 according to auxiliary requests II to IV thus involves an inventive step.

Reasons for the Decision

Main request

1. Inventive step

1.1 Closest prior art

Document D5 is regarded as representing the closest prior art. This was not contested by either of the parties. The subject-matter of claim 1 is distinguished from the disclosure of this document in that either a reference portion of the web is detected in the folding section or a reference portion of the folded web is detected, to be used as a reference in the folding operation so as to generate positional information regarding a position of the detected reference portion,

and a path of the web is corrected based on the positional information.

1.2 Problem to be solved

The features which distinguished the subject-matter of claim 1 from the disclosure of document D5 enable the two edges of the web to be brought into a predetermined positional relationship with respect to each other (see paragraph [0008] of the patent in suit).

1.3 Solution

Document D21 offers a solution to this problem (see the sentence common to pages 3 and 4). It cannot be accepted that the method of folding a web disclosed in this document would not be suitable for use in a method for producing a disposable worn article and thus does not relate to the same technical field. The sentence common to pages 3 and 4 of document D21 states that the method according to the invention makes it possible to control the web so that the edges of the web are brought into alignment, also in the case of a web having a variable width. However, even if it is not expected that the web of document D5 would have significant changes of width, nevertheless the person skilled in the art would appreciate that document D21 offers a solution to the problem of bringing the edges of the web into a predetermined positional relationship with respect to each other as the web is folded over a folding member. In particular, Figure 3 of document D21 illustrates the method by means of which the control arrangement does not react to changes of width (Figures 3b and 3c), but nevertheless reacts to the

edges not being in alignment (Figure 3d) (see also page 10, line 9 to page 11, line 3).

The solution offered by document D21 is to detect the edges of the web by means of feelers 7,8 which contact the edges of the web at a position immediately upstream of rollers 9,10, in which folding of the web is completed. Signals obtained from the feelers are used as a reference in the folding operation so as to generate positional information regarding a position of the detected edges, and the path of the web is corrected based on the positional information.

Pairs of driven rollers 5,6 are provided which engage the edges of the web, the axes of the rollers being inclined relative to the transverse direction of the web. The rollers are controlled so as to open and close with respect to each other, so that, in the closed position, tension is exerted on the edges of the web. Correction of the web path, when the edges of the web are not aligned, is carried out by opening one of the pairs of rollers, so that the web is drawn towards the pair of rollers on the opposite side of the web (see page 11, lines 4 to 10). Whilst hand wheels 16 are provided for adjusting the position of the rollers, as shown in Figure 2 of document D21, these have nothing to do with correction of the web path.

Document D21 thus suggests to the skilled reader the first of the two alternative solutions claimed in claim 1 of the patent in suit to the problem as set out under point 1.2 above, that is, detecting a reference portion of the web in the folding section, the reference portion being used as a reference in the folding

operation so as to generate positional information regarding a position of the detected reference portion, and the path of the web being corrected based on the positional information.

1.4 The subject-matter of claim 1 thus does not involve an inventive step.

First auxiliary request

2. Amendment

2.1 Claim 1 specifies that the web is folded into an orientation along a generally vertical plane. The orientation of the web during the subsequent bonding step is not specified.

2.2 In the application as filed, the plane into which the web is folded is only disclosed together with the subsequent step of twisting the folded web into a generally horizontal orientation in order to facilitate the step of sealing the web (see paragraph [0026] of the published version of the application, in particular column 5, lines 4 to 11).

The application as filed thus does not disclose an arrangement in which the web is folded into an orientation along a generally vertical plane without the web being subsequently twisted into a generally horizontal orientation.

Second auxiliary request

3. Inventive step

In addition to the features of claim 1 according to the main request, claim 1 specifies that the path of the web is corrected by adjusting tensions that are applied on opposite side edges of the web while the web is being carried.

The addition of this feature does not affect the problem to be solved, so that, as stated above in connection with the main request, the person skilled in the art would adopt the solution to this problem offered in document D21, which, in addition to the features discussed above, in connection with claim 1 of the main request, also teaches that the path of the web is corrected by adjusting tensions that are applied on opposite side edges of the web while the web is being carried, by means of opening and closing of one of the pairs of rollers (see page 11, lines 4 to 10).

It cannot be accepted that, when one of the pairs of rollers 5,6 is opened to adjust the tensions that are applied on opposite side edges of the web, the web is no longer being carried. It is carried at least by the pair of rollers which remains closed. In addition, claim 1 does not require that the tension should be varied simultaneously on both sides.

Third and fourth auxiliary requests

4. Inventive step

Since, in the arrangement disclosed in document D21, the opposite side edges of the web are used as the reference portions, the additional feature included in claim 1 of these requests adds nothing inventive to claim 1 of the main or second auxiliary requests respectively.

Fifth, sixth and seventh auxiliary requests

5. Amendments

5.1 Claim 1 of each of these requests includes the feature that a reference portion of the web in the folding section *and* a reference portion of the folded web are used as a reference in the folding operation so as to generate positional information regarding a position of the detected reference portion. The claim thus specifies that detection takes place at a first location anywhere in the folding section, including a location on the partially folded web, and at a second location on the folded web, but not necessarily in the folding section.

5.2 In the application as filed, the illustrated embodiment of the invention includes either a single first sensor or a pair of first sensors 41 arranged downstream in the folding section (paragraph [0031]). In addition, a single second sensor or a pair of second sensors 42 may be arranged upstream in the folding section (paragraph [0043]).

In paragraph [0044], the first sensor is described as providing information regarding the height of the edge of the folded web, and the second sensor is described as providing information regarding the position of the web in the width direction immediately before the web is folded.

In addition, the application as filed provides a more general teaching in paragraphs [0011] and [0012]. According to the first sentence of paragraph [0011], detection is preferably performed "before the web is completely folded in two". The second sentence of paragraph [0011] sets out three alternative positions for detection, that is, "when the web is not folded at all, is starting to be folded, or immediately before the web is completely folded in two".

The paragraph then goes on to state that it is preferred that detection is performed at two locations, respectively upstream and downstream of the contact member with which the web is folded in two.

Paragraph [0012] refers to detection after the web is folded as an alternative. This is construed as referring to an alternative to detection before folding.

Thus, the only disclosure in the application as filed of detection at two locations is in the arrangement depicted in Figure 2 and in the third sentence of paragraph [0011]. Both of these disclosures require that detection is performed upstream and downstream of the contact member. Claim 1 is, however, not so limited, as set out under point 5.1 above.

Eighth and ninth auxiliary requests

6. Amendments

6.1 Claim 1 of each of these requests includes the feature that the side edges of the web are detected at two spaced-apart locations including an upstream location and a downstream location before folding the web.

6.2 The application as filed does not disclose detection at two locations before folding the web. In paragraph [0011] it is disclosed that when detection is performed at two locations, one of those locations is downstream of the contact member. Similarly, in the illustrated embodiment, only the second sensors detect the side edges of the web before folding the web.

It is correct that the second sensors may be a pair. The pair of sensors is, however, located at the same location in the direction of travel of the web and is thus not upstream and downstream of one another.

It is further noted that claim 1 of auxiliary request VIII does not constitute a simple combination of claims 1 and 3 as filed. Claim 1 as filed merely specifies that a reference portion of the web is detected without specifying the location in any way.

7. The subject-matter of claim 1 of the main and second to fourth auxiliary requests thus does not involve an inventive step. The amendments to claim 1 according to the first and fifth to ninth auxiliary requests do not satisfy the requirement of Article 123(2) EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

D. Meyfarth W. Zellhuber