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Datasheet for the decision of 18 October 2010

Case Number: T 0248/08 - 3.2.05

Application Number: 98957439.7

Publication Number: 1027494

IPC: D21F 11/00

Language of the proceedings: EN

Title of invention:
Method of making low density resilient webs

Patentee:
KIMBERLY-CLARK WORLDWIDE, INC.

Opponent:
SCA Hygiene Products AB

Headword:
-

Relevant legal provisions:
EPC Art. 56

Relevant legal provisions (EPC 1973):
-

Keyword:
"Inventive step - yes"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0248/08 **-** 3.2.05

D E C I S I O N
of the Technical Board of Appeal 3.2.05
of 18 October 2010

Appellant: (Opponent)
SCA Hygiene Products AB
S-405 03 Göteborg (SE)

Representative:
Görg, Klaus
Hoffmann Eitle
Patent- und Rechtsanwälte
Arabellastrasse 4
D-81925 München (DE)

Respondent: (Patent Proprietor)
KIMBERLY-CLARK WORLDWIDE, INC.
401 North Lake Street
Neenah WI 54956 (US)

Representative:
Mabey, Katherine Frances
Dehns
St Bride's House
10 Salisbury Square
London EC4Y 8JD (GB)

Decision under appeal:
Interlocutory decision of the Opposition Division of the European Patent Office posted 15 November 2007 concerning maintenance of European patent No. 1027494 in amended form.

Composition of the Board:

Chairman: W. Zellhuber
Members: H. Schram
M. J. Vogel

Summary of Facts and Submissions

I. The appellant (opponent) lodged an appeal against the decision of the Opposition Division posted on 15 November 2007 maintaining European patent No. 1 027 494 in amended form on the basis of the main request of the respondent (patent proprietor) filed on 18 October 2007.

The Opposition Division held that claim 1 as amended met the requirements of Article 84 EPC and that the grounds of opposition under Article 100(a) EPC (lack of inventive step, Article 56 EPC) did not prejudice the maintenance of the patent in amended form.

II. Oral proceedings were held before the Board of Appeal on 18 October 2010.

III. The appellant requested that the decision under appeal be set aside and that the patent in suit be revoked.

The respondent (patent proprietor) requested that the decision under appeal be set aside and the patent be maintained on the basis of claims 1 to 39, filed as its main request during the oral proceedings.

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

"1. A method for producing a tissue web, comprising:

a) depositing an aqueous suspension of papermaking fibers onto a forming fabric (2) to form a wet web (1);

b) dewatering the wet web (1) to a consistency suitable for a rush transfer operation;

c) rush transferring the dewatered web (1) to a first transfer fabric (3, 22) having a Surface Depth of at least 0.1 mm;

d) transferring the web (1) to a second transfer fabric (7, 23);

e) transferring the web (1) to the surface of a drum dryer (11), wherein the web is removed from the surface of the drum dryer without creping; and

f) removing the web (1) from the surface of the drum dryer (11);

wherein the web (1) has a first surface which contacts the first transfer fabric (3) during rush transfer and which later contacts the drum dryer (11);

or wherein the method further comprises transferring the web (1) from the second transfer fabric (23) back to the first transfer fabric (22) such that the web (1) is repositioned on the first transfer fabric (22), wherein the web (1) has a first surface which contacts the first transfer fabric (22) during rush transfer and an opposite second surface which later contacts the drum dryer (11);

and wherein no rotary throughdryer is used to dry the web."

V. The documents referred to in the appeal proceedings included the following:

D4 EP-A 0 625 610

VI. The appellant did not give any comments on the claims according to the main request of the respondent.

VII. The arguments of the respondent, in writing and during the oral proceedings, can be summarized as follows:

The contested patent as amended was directed to the problem of providing an improved tissue with high bulk and absorbency, but without needing to crepe or throughdry the tissue, see paragraphs [0001], [0009] and [0010]. As discussed in paragraph [0007] and page 3, lines 17 to 20, in this context it was desirable to incorporate a rush transfer step before transferring a web to a drum dryer surface as this may impart to the sheet greater flexibility and softness as well as bulk. However, the inventors have realised that when a rush transfer step was used to transfer the web to a transfer fabric which then pressed the web onto a drum dryer's surface, the web may exhibit an undesirable tendency to break on removal from the dryer, see paragraphs [0065] and [0067]. This problem and other problems that occurred in the production of an uncreped web using rush transfer and drum drying were solved in two alternative ways by the invention of claim 1 of the main request. In accordance with the first alternative, after rush transferring the dewatered web to a transfer fabric, the web was not transferred to the surface of the drum dryer but first to a second transfer fabric, such that the web was "inverted", ie the surface which contacted the transfer fabric during rush transfer was the surface which later contacted the drum dryer, see paragraphs [0012] and [0072]. In accordance with the second alternative, the web is repositioned by temporarily transferring it from the first transfer fabric to another transfer fabric and then back to the first transfer fabric before application to the drum surface, see paragraph [0016] and page 13, lines 30 to 36.

The prior art cited by the appellant did not hint at or suggest the solution claimed in claim 1 of the main request. The invention according to document D4 was based on the discovery that the bulk of a wet web could be significantly increased by abruptly deflecting the wet web ("wet straining"), see page 2, lines 24 to 30. Document D4 disclosed a method of making a tissue product wherein no rush transfer occurred. Figure 3 showed an embodiment in which a throughdryer was not used, but instead a Yankee dryer, and in which the web-strained web was removed from said dryer by creping, see page 5, lines 37 to 51. From the statement on page 6, lines 26 and 27, of document D4, viz. "... whenever a throughdryer is used to dry the web, the final product can be uncreped", it followed that in the embodiment shown in Figure 3 the web-strained web could not be removed from the dryer other than by creping. This was in contrast to claim 1 of the main request, which required that the web was removed from the surface of the drum dryer without creping. It followed that the subject-matter of claim 1 of the main request involved an inventive step.

Reasons for the Decision

Main request

1. *Objection of lack of inventive step, Article 56 EPC*

1.1 The present invention relates to a method for producing a tissue web having high bulk and absorbency on a modified conventional wet-pressing machine, see

paragraph [0001] of the amended description (of the patent in suit).

The problem that the present invention seeks to solve is to provide a process which allows *uncreped* production of textured tissue on a drum dryer at industrially useful speeds *with minimal sheet failures* (see paragraph [0009] of the amended description). In relation to attempting to prevent sheet failure it was observed that a web that has been rush transferred onto a highly three-dimensional first transfer fabric has a tendency, if transferred directly onto a drum dryer, to fail or pick during removal, also in uncreped mode (see paragraphs [0010] to [0013], [0064], [0067] and [0068] of the amended description).

It may be noted that on the marked-up page filed during the oral proceedings the encircled + symbol indicating insertion of the feature "wherein the web is removed from the surface of the drum dryer without creping" is located after the expression "the drum dryer (11) in step e), see point IV above. In the opinion of the Board, it would have been more economical to amend feature f) as follows: "removing the web (1) from the surface of the drum dryer (11) without creping".

This problem is solved by claim 1 of the main request. In particular, the method for producing a tissue web according to claim 1 of the main request requires that no rotary throughdryer is used to dry the web and comprises the steps of rush transferring the dewatered web to a first transfer fabric (cf. step c)), transferring the web to *a second transfer fabric* (cf. step d)) and transferring the web to the surface of a

drum dryer (cf. step e)), and removing the web from the surface of the drum dryer without creping (cf. steps e) and f)). Moreover, steps c) through d) are executed such that the surface of the web that contacts the first transfer fabric during rush transfer later contacts the drum dryer ("web inversion", see paragraphs [0013], [0069] and [0072] of the amended description), or, as an additional step between steps d) and e), the web is transferred from the second transfer fabric back to the first transfer fabric ("repositioning of the web") such that the surface opposite the surface of the web which contacts the first transfer fabric during rush transfer later contacts the drum dryer (see paragraph [0080] as from page 13, line 30, of the amended description).

1.2 The Board concurs with the respondent that none of the prior art documents cited by the appellant identified the critical problem, identified in paragraph [0010] of the amended description, that "centers around the interaction of rush transfer, three-dimensional fabrics, and sheet attachment to the Yankee", namely the problem of sheet failure, see point 1.1 above.

None of the prior art documents suggests, or hints at, the solution to that problem, which includes the combination of the following features: using a drum dryer (and not a rotary throughdryer), a rush transfer step, removing the web from the surface of the drum dryer without creping, and, as a first alternative, web inversion, or, as a second alternative, repositioning of the web. It may be noted that the second alternative (cf. the penultimate feature of claim 1 of the main request) is not disclosed in any of the prior art

documents. For that reason alone the subject-matter of the second alternative of claim 1 of the main request is not obvious to the person skilled in the art.

The only document that was discussed during the oral proceedings before the Board with respect to the main (sole) request of the respondent is document D4, which is cited in paragraph [0008] of the amended description.

Figure 3 of document D4 illustrates a wet-press method of this invention in which a throughdryer is not used. In this embodiment the wet web is transferred to a papermaking felt 4 and is then transferred (not a rush transfer) to a coarse mesh fabric 31, where it is wet-strained between fabric 31 and fabric 32 and, ie the wet-strained web 33, transferred to the surface of Yankee dryer, where it is dislodged by doctor blade (creped), resulting in creped tissue 34. Since the web has been transferred three times after the first transfer stage, web inversion has occurred (cf. page 13, lines 56 to 59, of the amended description of the patent in suit). However, it is not envisaged in document D4 that the wet-strained web 33 can be removed without creping, see page 6, lines 25 to 27, of document D4.

In the judgment of the Board, the subject-matter of the first alternative of claim 1 of the main request is therefore not obvious to the person skilled in the art.

1.3 The subject-matter of claim 1 of the main request is therefore not obvious to the person skilled in the art, and hence involves an inventive step, Article 56 EPC.

The subject-matter of claims 2 to 39, which are dependent from claim 1, similarly involve an inventive step.

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 on the basis of the following documents:

   (a) Claims 1 - 39, filed as main request during the oral proceedings;

   (b) Description: pages 2, 6 - 10, 12 and 13 as granted and pages 3 - 5, 11 and 14 - 16, filed during the oral proceedings;

   (c) Drawings: Figures 1 - 7 as granted.

The Registrar: The Chairman:

D. Meyfarth W. Zellhuber