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**Datasheet for the decision
of 31 August 2006**

Case Number: T 0995/04 - 3.3.06

Application Number: 94303680.6

Publication Number: 0632163

IPC: D21H 27/08

Language of the proceedings: EN

Title of invention:

Process of producing porous web materials used for making infusion packages for brewing beverages and the web materials thus produced

Patentee:

Ahlstrom Windsor Locks LLC

Opponent:

J.R. CROMPTON LIMITED

Headword:

Infusion packages/DEXTER

Relevant legal provisions:

EPC Art. 54, 56

Keyword:

"Novelty (yes) - subject-matter not clearly and unambiguously disclosed"

"Inventive step (yes) "

Decisions cited:

-

Catchword:

-



Case Number: T 0995/04 - 3.3.06

D E C I S I O N
of the Technical Board of Appeal 3.3.06
of 31 August 2006

(Opponent)

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Decision under appeal:

Interlocutory decision of the Opposition
Division of the European Patent Office posted
1 June 2004 concerning maintenance of European
patent No. 0632163 in amended form.

Composition of the Board:

Chairman: L. Li Voti
Members: G. Dischinger-Höppler
J. Van Moer

Summary of Facts and Submissions

I. This appeal is from the interlocutory decision of the Opposition Division concerning maintenance in amended form of European patent No. 0 632 163 relating to a process of producing porous web materials suited for making infusion packages for brewing beverages and the web materials thus produced.

The two independent claims as granted read:

"1. A porous fibrous web material, suited for making infusion packages which are for brewing beverages and which exhibit improved resistance to failure of a mechanical seam therein, said web material being impregnated throughout its extent with one percent or more by weight of a hydrophobic treating system, the impregnated web exhibiting a water climb of not more than 0.5 inch (13 mm) over a period of 400 seconds when measured using water at a temperature of about 100°C and no substantial loss of infusion characteristics as measured by first-colour infusion time while providing less than 10 percent failure in the mechanical seam of tea bags constructed from the said web material upon exposure to boiling water.

12. A process for producing porous web materials for infusion packages having enhanced mechanical seam integrity comprising the steps of providing a porous absorbent web material suited for use as an infusion package, and treating the entire web material with a hydrophobic treating system to provide a treated web that exhibits a water climb of not more than 0.5 inch (13 mm) over a period of 400 seconds when measured

using water at a temperature of about 100°C and less than 10 percent failure in a mechanical seam of tea bags constructed from the said web material when exposed to boiling water."

II. A notice of opposition had been filed against the granted patent, wherein the Opponent sought revocation of the patent on the grounds of Article 100(c) EPC for extension beyond the content of the application as filed (Article 123(2) EPC), Article 100(b) EPC for insufficient disclosure (Article 83 EPC) and Article 100(a) EPC for lack of novelty and lack of inventive step (Articles 52(1), 54(2) and 56 EPC). The opposition was based on the following documents

D1 US-A-3 386 834,

D2 EP-A-0 170 461 and

D3 US-A-3 616 166.

III. In its decision, the Opposition Division held that the patent as granted (main request) met the requirements of Articles 123(2) and 83 EPC but not those of Article 100(a) EPC due to lack of novelty of the subject-matter of Claims 1 and 12 in view of the disclosure of D3. In particular, it was held that the web disclosed in D3 was also suitable for making tea bags and had a pick up level of up to 100% of a polyblend containing up to 90% by weight of an ethyl acrylate polymer binder. It would, therefore, necessarily exhibit a seam failure, a water climb and no substantial loss of infusion characteristics as required in Claim 1 since according to the patent in

suit, a pick up level of 1% of acrylate polymer would be sufficient to provide improved seam integrity, since the water climb was correlated to the failure rate and since the feature concerning "no substantial" loss of infusion characteristics was vague and therefore applicable for any web suitable for forming tea bags.

Further, the Opposition Division rejected the first and second auxiliary requests under the provisions of Article 123(2) EPC but maintained the patent in amended form on the basis of the 21 claims according to the then pending third auxiliary request.

- IV. The Proprietor (hereinafter Appellant) appealed this decision. The Opponent (hereinafter Respondent) did not respond during the appeal proceedings.
- V. The Respondent did not reply within the time limit set by the Board for making submissions in reply to its communication dated 24 April 2006, sent by registered letter, in which the Respondent was once again reminded of the pending appeal. This communication further contained the clear indication that if no answer was received to the communication in due time this would be interpreted by the Board as meaning that the Respondent had lost any interest in the case.
- VI. The Appellant submitted that the subject-matter claimed in the main request was novel over the disclosure of D3 since there was no reason for a skilled reader to assume that a fibrous web treated with the particular adhesive binder of D3 would satisfy the limits placed in Claims 1 and 12 of the patent in suit on the water climb performance and on the mechanical seam failure

rate. Moreover, D3 taught to apply the binder only to pre-selected areas and not to the entire area of the web material in order to improve the web's porosity to gases and liquids.

The Appellant further submitted that the claimed subject-matter was inventive in view of the disclosure of any of D1 to D3, alone or in combination, since D1 did not suggest treated areas of as much as 50%, let alone areas approaching 100%, D2 related to the different technical problem of improving extraction of flavour oils and aromas into a food extract and the technical problem addressed in D3 was the provision of a binder that can be heat sealed irrespective of whether the bonded fabric is in a state of rest or in a state of tension.

VII. The Appellant requested that the decision of the Opposition Division be set aside and that the patent be maintained on the basis of the claims as granted. An auxiliary request for oral proceedings was also submitted.

No request was submitted by the Respondent.

Reasons for the Decision

1. *Amendments (Article 123(2) EPC) and sufficiency of disclosure (Article 83 EPC)*

1.1 The Board has no reason to doubt that the claims as granted do not extend beyond the application as filed. In fact, the amendments made to Claims 1 and 12 are

found to be based on the disclosure on page 4, lines 37 to 48, in combination with page 5, Table 1 as far as the water climb feature is concerned and on page 5, lines 1 to 3 and 32 to 34, concerning the seam failure characteristic and the loss of infusion characteristic. Claims 2 to 10 and 13 to 19 are found to be identical with or derivable from the original Claims 2 to 10 and 12 to 18. Claim 11 is found to be based on the disclosure on page 3, lines 44 to 46, in combination with page 4, lines 19 to 25. Claims 20 and 21 are found to be based on the disclosure on page 3, lines 55 to 57 (all references relate to the published version of the European Patent Application).

1.2 The Board is also convinced that the invention is sufficiently disclosed since the patent in suit indicates suitable materials to be used (paragraphs 11 to 15), methods of applying the hydrophobic material to the web material (paragraphs 16 and 17), solution concentrations and web pick-up amounts (paragraph 18) as well as the test methods for determining the characteristics relating to the water climb, loss of infusion and seam failure (paragraphs 19 and 20).

1.3 The Board is, therefore, satisfied that the patent as granted meets the requirements of Articles 123(2) and 83 EPC.

2. *Novelty*

2.1 In the decision under appeal, the Opposition Division rejected the Appellant's main request for lack novelty of the claimed subject-matter in view of D3 for the reasons set out in point III above.

The Board concurs with the opinion of the Opposition Division insofar as D3 discloses a porous fibrous web, suitable for making infusion packages for brewing beverages, such as tea bags, which web may be impregnated with a binder composition containing up to 90% by weight of ethyl acrylate polymer so as to have the binder composition applied over the entire area in an amount up to 100% by weight based on the level of the dried fibres, corresponding to a pick up level of the ethyl acrylate polymer of 90% (Claim 1, column 5, lines 11 to 21, 55 to 58 and 64 to 68).

The Opposition Division concluded that the high pick up level of ethyl acrylate polymer in D3 would inevitably result in a porous web exhibiting a seam failure as required in Claims 1 and 12 since, according to the patent in suit, a preferred hydrophobic treating system was ethyl acrylate polymer (page 3, lines 54 to 55) and a pick up level of 1% by weight would be effective to provide improved seam integrity (page 4, paragraph 18). The same was true for the water climb characteristic which was correlated with the failure rate.

However, the binder composition used in D3 necessarily consists not only of the polymer of ethyl acrylate, but also of at least 10% by weight based on the binder composition of a second polymer which is defined via a minimum film forming temperature (MFT) of at least 50°C and consists of or contains units of vinyl chloride, methyl methacrylate, styrene, vinyl toluene and/or acrylonitrile (Claim 1, column 1, line 36 to column 2, line 18 and column 2, lines 27 to 32).

The above conclusion of the Opposition Division is, therefore, implicitly based on the assumption that the second polymer in D3 does not essentially influence either the failure rate or the water climb, for which reasons are neither given in the contested decision nor is evidence on file.

It is apparent from Table I of the patent in suit (page 5) that polyvinylchloride, i.e. a component which may constitute the second polymer in D3, if applied to a fibrous web, results in a seam failure rate of 75% and a water climb in machine direction of 1 inch after only 292 seconds in hot water (of a temperature of 100°C). In contrast, application of polymers based only on ethyl and/or butyl acrylate results in 0% seam failure and no water climb or at most 0.5 inch after 400 seconds in hot water. The presence of the second polymer in D3 may, hence, considerably worsen the results obtained with an ethyl acrylate polymer, if applied alone.

The Board, therefore, concludes that due to the presence of at least 10% by weight of the second polymer in the binder composition, there is no reason to assume that the web disclosed in D3 inevitably would exhibit a seam failure rate and water climb as required in Claims 1 and 12 of the patent in suit.

In other words, D3 does not clearly and unambiguously disclose the subject-matter of Claims 1 and 12.

- 2.2 The same is true with respect to the disclosure of D1 and D2 if only for the reason that none of them discloses a web material impregnated with one or more

percent by weight of a hydrophobic treating system and exhibiting necessarily a water climb and seam failure rate as required in Claims 1 and 12 of the patent in suit.

D1 is silent about the amount of hydrophobic material to be used but discloses that a water repellent material, especially organopolysiloxanes, may be applied to the infuser web by brush, roll, spray or gravure roll (column 3, lines 11 to 31). D1 further discloses the application of the water repellent material over the entire surface area, however, only for the purpose of illustrating the influence of the material on the porosity of the web. Thus, it is shown in Table 1 that the porosity of the web considerably decreases with increasing percentage between 1% and 15% by weight of silicone in the aqueous emulsion (column 4, lines 13 to 31 and Table 1). However, what matters for enabling the skilled reader of D1 to determine the resin pick-up by a non woven web material, is the amount of said emulsion which has been actually applied by the rolls, brushes or sprays. No such amounts can be derived, explicitly or implicitly, from the disclosure of D1.

With respect to D2, it is observed that this document explicitly discloses treatment levels of below 1% by weight, specifically between 0.05 and 0.6% by weight (page 7, lines 19 to 22 and Claim 5).

- 2.3 The Board is, therefore, satisfied that the subject-matter of Claim 1 is novel in view of the cited prior art documents (Article 54 EPC).

3. *Inventive Step*

3.1 The patent in suit and, in particular, Claims 1 and 12, aim at a porous web material used for making infusion packages for brewing beverages, such as tea bags, and a process for making such materials (page 2, paragraph 1). It is explained that upon placement into boiling water, such bags generally tend to inflate and float on the top of the water. This "ballooning effect" is due to entrapped gases which build up a positive pressure within the bag and frequently cause seam failure by opening of the seams of mechanically sealed bags (page 2, paragraph 2).

D1 is the only document which also relates to the avoidance of rupture of seams of infusion packages due to the "ballooning effect" (column 1, lines 18 to 45).

3.2 The Board, therefore, agrees with the respective opinion of the Opposition Division that D1 qualifies as a suitable starting point for the assessment of inventive step of the subject-matter of Claims 1 and 12.

In order to avoid the above disadvantages, D1 suggests to provide a continuous infuser web material provided with small water repellent and air permeable zones or areas which exhibit, upon contact of the web with water, a higher degree of air permeability than the remainder of the material (column 2, lines 8 to 12). For this purpose, the infuser webs are treated only in particular areas with a water repellent material, such as organopolysiloxanes, suitable to provide wetting resistance without adversely affecting the air permeability of the treated areas (Claim 1 and

column 2, line 67 to column 3, line 26). According to D1, the water repellent zones cover from 0.1 to 40% of the total surface area of the web (Claim 2 and column 4, lines 46 to 74).

In contrast, according to Claims 1 and 12 of the patent in suit, the entire area of the web is treated with the hydrophobic treating system to give the required water climb and seam failure.

3.3 Considering that D1 does not disclose data which are directly comparable with the claimed water climb and seam failure rate, the technical problem actually solved by the subject-matter of Claims 1 and 12 in view of the disclosure of D1 can be seen as consisting at least in providing an alternative infuser web suitable for making tea bags of reduced seam failure rate and a process for making such a web. Considering the examples illustrated in Table I of the patent in suit, it is credible that, in accordance with Claims 1 and 12, this problem can be solved by treating the entire surface of the web with a hydrophobic treating system.

3.4 It remains to be assessed whether, in view of the available prior art documents, it was obvious for someone skilled in the art to solve this problem by the means claimed.

3.5 The Board concurs with the opinion of the Opposition Division that for the assessment of inventive step account cannot be taken of the disclosure in column 4, lines 13 to 31 and Table 1 of D1 concerning completely treated webs since this disclosure does not constitute

a possible solution of the technical problems caused by the "ballooning effect" (see point 2.2 above).

The Board observes instead that D1 teaches away from impregnating the entire area of the infuser web by disclosing that above 40%, the porosity of the web tends to decrease (column 4, line 75 to column 5, line 4).

3.6 The other cited prior art, i.e. D2 and D3, does not give a skilled person any incentive to disregard this particular disclosure of D1 against impregnating the entire area of the web since they relate to quite different technical problems, namely to prevent sorption of flavour oils into the package material (D2, page 2, line 27 to page 3, line 10) or respectively, to provide a binder of adhesive composition which is adapted, when applied to a nonwoven fabric, to be heat sealed even if the fabric is in a state of tension resulting from the bending or flexing of the sheet into a three-dimensional configuration (D3, column 1, lines 6 to 34).

3.7 The Board, therefore, concludes that the subject-matter of Claims 1 and 12 of the main request is not obvious in the light of the cited prior art and, hence, involves an inventive step as required by Article 52(1) EPC in combination with Article 56 EPC.

The dependent Claims 2 to 11 and 13 to 21 refer to preferred embodiments of the subject-matter of Claims 1 and 12 which are based on an inventive step for the same reasons indicated above.

4. Since the appeal is successful, there was no need to provide for the oral proceedings requested solely by the Appellant.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is maintained unamended.

The Registrar:

The Chairman:

G. Rauh

L. Li Voti