

A		B		C	X
---	--	---	--	---	---

File Number: T 0455/90 - 3.2.4

Application No.: 82 200 209.3

Publication No.: 0 059 506

Title of invention: Macroscopically expanded three-dimensional plastic web exhibiting non-glossy visible surface and cloth-like tactile impression and process for its manufacture

Classification: A41B 13/02

DECISION
of 10 February 1993

Applicant: The Procter & Gamble Company

Opponent: Mölnlycke AB

Headword: Plastic web/PROCTER

EPC Art. 56 and 123(2)

Keyword: "Inventive step (yes)" - "Allowable amendments (yes)"



Case Number : T 0455/90 - 3.2.4

DECISION
of the Technical Board of Appeal 3.2.4
of 10 February 1993

Appellant : Mölnlycke AB
(Opponent) S-405 03 Göteborg (SE)

Representative: Görg, Klaus, Dipl.-Ing.
Hoffmann, Eitle & Partner
Arabellastrasse 4 (Sternhaus)
W-8000 München 81 (DE)

Respondent : The Procter & Gamble Company
(Proprietor of the patent) 301 East Sixth Street
Cincinnati, Ohio 45202 (US)

Representative : Gibson, Tony Nicholas
Procter & Gamble (NTC) Limited
Whitley Road
Longbenton
Newcastle-upon-Tyne NE12 9TS (GB)

Decision under appeal : Interlocutory decision of the Opposition Division
of the European Patent Office taken on 14 March
1990 and forwarded on 30 March 1990, concerning
maintenance of European patent No. 0 059 506 in
amended form.

Composition of the Board :

Chairman : C.A.J. Andries
Members : R.E. Gryc
W. Moser

Summary of Facts and Submissions

I. European patent No. 0 059 506 comprising eight claims was granted to the Respondent on 24 June 1987 on the basis of European patent application No. 82 200 209.3 filed on 22 February 1982.

II. The Appellant (Opponent) filed an opposition on 23 March 1988 and requested the revocation of the patent on the ground of lack of inventive step of its subject-matter, mainly in view of the following documents:

D1: EP-A-18 684

D2: US-RE-23 910

D3: US-A-3 950 480

D4: US-A-2 689 379

III. By an interlocutory decision forwarded on 30 March 1990, the Opposition Division maintained the contested European patent in amended form.

On 23 May 1990, the Appellant lodged an appeal and simultaneously paid the relevant fee.

In his Statement of Grounds filed on 7 August 1990 he contended that D1 described a plastic web having all the features of the pre-characterising portion of the granted Claim 1 and disclosed ranges of sizes embracing the limits cited in said claim.

Moreover, in his opinion, the way to reduce the gloss and the regularity of the pattern of the surface aberrations was already indicated in D3. For these reasons, the Appellant was of the opinion that the subject-matter of

the contested patent lacked an inventive step and was not patentable.

- IV. In a communication pursuant to Article 11(2) of the Rules of Procedure of the Boards of Appeal sent to the parties on 27 January 1993 in preparation for the oral proceedings, the Board gave its provisional opinion according to which the invention appeared to be novel and the teaching of using particular size limits in combination with a regularly spaced pattern of surface aberrations might be recognised as inventive.

The Board also pointed out that not only a regularly spaced pattern but also regularly sized aberrations seemed to be essential for a substantially non-glossy visible surface.

- V. Oral proceedings took place on 10 February 1993.

At the hearing the Respondent (Proprietor of the patent) submitted new Claims 1 to 7 and a description amended accordingly.

The Appellant objected that the subject-matter of the new Claim 1 lacked an inventive step in comparison with the state of the art disclosed in D1 seen in the light of the teaching of D3 or D4.

In particular he contended:

- that D1 described exactly the same problem to be solved as the invention,
- that the only differences between the subject-matter of Claim 1 and the state of the art disclosed in D1 resided in the regularity of the sizes of the

aberrations and in the non-glossy aspect of the web according to the invention,

- that D3 already disclosed these features together with incentives to adopt them on a plastic web, and
- that the regular pattern of uniformly spaced perforations of the thermoplastic sheet according to D4 gave a hint to the skilled person as far as the regularity of the aspect of the web is concerned.

Consequently, the Appellant concluded that the subject-matter of the new Claim 1 was not patentable.

The Respondent contested the argumentation of the Appellant and by means of an experiment he proved that, when considering the gloss of a web, a distinction should be made between the gloss to be perceived by the viewer's eye and the gloss which can be measured by means of a specific "gloss meter", the perception of a gloss by the viewer's eye being the result of a combination of visibility and diffusion of light.

- VI. The Appellant requested that the decision under appeal be set aside and the European patent No. 59 506 be revoked.

The Respondent requested that the appeal be dismissed and the patent be maintained on the basis of the following documents:

(a) Main request:

- Claims 1 to 7 and description submitted during the oral proceedings; drawings as granted.

(b) Auxiliary request:

- Claims 1 to 6 filed on 8 February 1993 and description amended accordingly; drawings as granted.

VII. Claim 1 (main request) filed at the oral proceedings reads as follows:

"A plastic web (30,40) having a three dimensional macroscopic pattern and having a visible surface exhibiting microscopic surface aberrations (33,43) which are not discernible to the naked eye when the perpendicular distance between the viewer's eye and the plane of said web is at least 30 cm, each of said surface aberrations being free of planar areas which are large enough to inscribe a 0.1 mm diameter circle, whereby light incident upon said visible surface is diffusely reflected into a multiplicity of directions by said surface aberrations to reduce the gloss on said surface, characterised in that, said surface aberrations are regularly sized and are disposed in a regularly spaced pattern over substantially all of said visible surface, said aberration size being measured in the plane in which said surface aberrations originate, said spaced pattern being such that the maximum diameter of any circle which can be inscribed on any planar surface of the web intermediate adjacent surface aberrations is less than 0.1 mm, the minimum average amplitude of said surface aberrations being 0.005 mm, as measured perpendicular to and from the surface in which said surface aberrations originate, the maximum dimension of any said surface aberrations being less than 0.15 mm as measured substantially perpendicular to the amplitude of said surface aberrations, in the plane in which said surface aberrations originate, whereby said visible surface is rendered substantially non glossy."

Reasons for the Decision

1. Admissibility of the appeal

The appeal complies with Articles 106 to 108 and Rule 64 EPC and is admissible.

2. Admissibility of the amendments to Claim 1 (main request) with regard to Article 123(2) and (3) EPC

Claim 1 as filed at the oral proceedings differs from granted Claim 1 mainly as follows:

- 2.1. It has now been specified in the definition of the invention that the surface aberrations are "**regularly sized... said aberration size being measured in the plane in which said surface aberrations originate**". A support to this added feature can be found in the description of the application as originally filed either on page 21, lines 20 and 21, where a single overall cross-sectional diameter value is given for all the aberrations of a preferred embodiment of the invention, or in the sentence bridging pages 24 and 25 referring to Figure 12 (see also respectively column 12, lines 10 to 12, and column 14, lines 18 to 23, of the patent).
- 2.2. The regularly spaced pattern of the surface aberrations is now described as extending "**over substantially all of the visible surface**". This feature is disclosed in the application as originally filed on page 27, line 10, or on page 28, lines 11 to 15, and more particularly on page 41, lines 9 to 18 (see also column 23, lines 24 to 33, of the patent).
- 2.3. A "**minimum average amplitude of 0.005 mm**" is now specified for the surface aberrations. This new added

characteristic is supported by the original disclosure in particular on page 30, lines 10 to 12 (0.2 mils), or on page 39, lines 21 to 23 and on page 44, lines 20 to 25 (0.2 mils).

2.4. The content of Claim 8 as originally filed, specifying an upper limit of 0.15 mm to the maximum dimension of the surface aberrations as measured in the plane in which they originate, has now been inserted into Claim 1.

2.5. Since, moreover, the addition of all these new features restricts the scope of protection of Claim 1, no objection can be raised under Article 123 EPC.

3. Interpretation of Claim 1 (main request)

3.1. Meaning of the terms "gloss" and "non-glossy"

3.1.1. As already explained in section V above and demonstrated by the Respondent during the hearing, a distinction should be made between a **"measured gloss"** and a **"perceived gloss"**. It may be that no gloss can be perceived by the viewer's eye under certain conditions even though a gloss can nevertheless be measured. Since Claim 1 does not indicate which gloss is the subject-matter of the claim, the answer is to be sought in the description in application of Article 69(1) EPC.

3.1.2. In its introductory part (see column 2, lines 55 to 62, of the description of the patent in suit) it is the glossy **"appearance"** of a plastic material of the state of the art that is considered to be a disadvantage.

Also, in the presentation of the object of the invention (see column 4, lines 57 to 64), the absence of gloss should be checked directly by the viewer's eye without

the help of any gloss metering device. Moreover, the detailed description of the invention (see in particular column 9, lines 34 to the end, and column 10, lines 1 to 8) is clearly concerned with the appearance of a visible surface and its gloss as "**visually perceived**" by the naked eye of the observer.

3.1.3. Consequently, the gloss referred to in Claim 1 should be considered as a "**perceived gloss**" and not as a measured gloss.

3.2. Meaning of the expression "**Regularly sized**"

3.2.1. As already noted in section 2.1 above, the aberrations in the preferred embodiment of the invention as represented in Figures 9 to 12 of the patent in suit have a common overall cross-sectional diameter (see column 12, lines 10 to 12 of the description of the patent in suit) and are thus uniformly sized.

However, the weave pattern of the screen of the forming structures utilised to produce the webs may be varied as desired (see the sentence bridging columns 26 and 27 of the description of the patent in suit), resulting in immediately adjacent surface aberrations differing in cross-sectional size.

3.2.2. Consequently, the expression "**regularly sized**" should not be interpreted as limited to the meaning "**uniformly sized**" but should be understood in a more general sense i.e. "**controlled and predetermined**" which includes the meaning "**uniformly sized**".

4. Novelty (main request)

After having examined all of the available prior art documents, the Board is satisfied that none of them discloses a plastic web comprising in combination all the features described in Claim 1.

Since this has never been disputed during the proceedings, there is no need for further detailed substantiation of this matter.

The subject-matter as set forth in Claim 1 is thus to be considered as novel within the meaning of Article 54 EPC with respect to the prior art brought to the consideration of the Board.

5. The closest state of the art

5.1. Among all the citations opposed to the patent in suit, D1 describes the most characteristics cited in Claim 1. In particular D1 describes a thermoplastic film having a primary three-dimensional macroscopic pattern and a secondary pattern of microscopic nubbles superposed over substantially the entire surface of said primary macroscopic pattern so that the plastic film exhibits a clothlike feel and appearance, i.e. so that the tactile impression is improved and the gloss of the film is reduced.

Moreover, D1 proposes ranges of sizes for the nubbles embracing the size limits given in Claim 1.

5.2. Nevertheless, in comparison with this state of the art, the invention as defined in Claim 1 differs in that:

- (a) its surface aberrations are regularly sized and spaced over substantially all the visible surface of the web instead of being randomly dimensioned and distributed according to D1,
- (b) its claimed dimensions (spacing and maximum dimension) measured in the plane in which the surface aberrations originate are upper size limits whereas D1 states maxima for average dimensions,
- (c) it indicates a spacing between adjacent surface aberrations not to be overstepped whereas D1 discloses a hypothetical average spacing proportional to the average diameter of the nubbles,
- (d) it recommends a minimum average amplitude (0.005 mm) which is about 30% higher than the minimum height of the nubbles calculated from the smallest cross-sectional diameter (0.0127 mm) proposed in D1, and
- (e) its claimed maximum dimension of any surface aberrations (0.15 mm) is about half the maximum average diameter which has been found to be satisfactory according to D1 (see page 7, line 32, to page 8, line 2).

6. The problem and its solution

- 6.1. It should be noted that the implementation of any combination of the characteristics given in D1 results only in a reduction of the perceived gloss of the plastic film and not in its disappearance. Consequently, this known film would still be perceived as a plastic

material by the wearer and his psychological reluctance referred to in the patent in suit (see the end of column 2 of its description) would remain unchanged even if the gloss were substantially reduced.

- 6.2. Therefore, when starting from the closest state of the art disclosed in D1, the problem to be solved by the skilled person is the total disappearance of any perceived gloss all over the visible surface of the plastic film; otherwise it will still be perceived as plastic material.
- 6.3. The Board has no reason to doubt that the implementing of all the measures a to e cited above under section 5.2 taken in combination would result in the complete disappearance of the perceived gloss of the plastic film.

7. Inventive step (main request)

- 7.1. The question now remains as to whether, on the basis of a plastic film according to D1, the prior art seen in the light of the general common knowledge of the skilled person would provide him with enough information and hints to lead him to the solution proposed in Claim 1.
- 7.2. Firstly, it should be pointed out that all the features described in Claim 1 concern exclusively the secondary pattern of microscopic aberrations provided at the visible surface of the basic three-dimensional macroscopic structure of the web and that none of the documents cited during the proceedings other than D1 is concerned with a plastic sheet having such a superimposed pattern of microscopic surface aberrations.

As far as the concept of regularity in sizes and spacings claimed in Claim 1 is concerned, the state of the art described in D2, D3 and D4 would offer the skilled person nothing more than he already knew from D1 wherein the macroscopic pattern of capillaries 38 is formed by arrays of regularly sized and spaced tapered holes 141 as shown in Figure 10.

With regard to the dimensional characteristics of Claim 1, neither D2, D3 nor D4 teaches specific size limits able to suggest the one according to the invention. The more relevant information is given by D3 which describes preferred patterns having surface aberrations in the range of 20 to about 250 points per 25.4 mm and having an amplitude of about 0.11 mm but this does not offer more than the teaching of D1.

Consequently, the person skilled in the art who desires to suppress completely the gloss still perceived on the plastic film according to D1 has a priori no reason to consult documents like D2 to D4 since they are concerned with plastic film exhibiting only a macroscopic pattern and no superimposed microscopic surface aberrations and, even if he did, he would find no more information than already available in D1.

If he now limited his investigations to the content of D1 in the light of his common general knowledge, the skilled practitioner would be led in the opposite direction as far as the regularity of sizes and pattern of the microscopic surface aberrations is concerned and he would find absolutely no hint to help him choose specific limits in the disclosed ranges of dimensions.

7.3. For the foregoing reasons, the Board is convinced that the further improvement of the plastic film known from D1 according to the teaching of Claim 1 does not follow plainly and logically from the prior art, but rather involves an inventive step within the meaning of Article 56 EPC.

8. Conclusion

Therefore, the patent in suit may be maintained on the basis of the documents submitted in connection with the main request and, for this reason, there is no need to examine the Respondent's auxiliary request.

9. Information of the parties

At the oral proceedings, the Appellant had the opportunity to comment on the amendments submitted by the Respondent (main request). Therefore, it is not necessary to issue a communication pursuant to Rule 58(4) EPC.

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 based on the documents submitted in connection with the main request (see section VI(a) above).

The Registrar:


S. Fabiani

The Chairman:


C. Andries