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Datasheet for the decision of 20 May 2014

Case Number: T 0852/11 - 3.3.07

Application Number: 07115061.9

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Title of invention:
Retraction of Sulcus

Applicant:
Coltène/Whaledent AG

Headword:

Relevant legal provisions:
EPC Art. 54
RPBA Art. 13

Keyword:
Novelty - main request (no)
Late-filed auxiliary request - auxiliary request 1 - admitted (yes)
Novelty - auxiliary request 1 (no)
Late-filed auxiliary request - auxiliary request 2 - admitted (no)

Decisions cited:

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Case Number: T 0852/11 - 3.3.07

D E C I S I O N
of Technical Board of Appeal 3.3.07
of 20 May 2014

Appellant: (Applicant)	Coltène/Whaledent AG Feldwiesenstrasse 20 9450 Altstaetten (CH)
Representative:	Hepp Wenger Ryffel AG Friedtalweg 5 9500 Wil (CH)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 2 November 2010 refusing European patent application No. 07115061.9 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	J. Riolo
Members:	D. Semino
	P. Schmitz

Summary of Facts and Submissions

I. The appeal lies from the decision of the examining division refusing European patent application No. 07 115 061.9.

II. The decision was based on claims 1 to 26 filed with the letter of 7 July 2010.

Claim 1 read as follows:

"1. A method of sulcus retraction, comprising the steps of:

- applying a flowable retraction material (1) onto the sulcus (5) of at least one tooth (4) and/or applying the said retraction material (1) into a dental dam (2);
- applying the dental dam (2) onto said at least one tooth (4); and
- allowing said dental dam (2) to get in contact with said retraction material (1) if the retraction material (1) has been applied onto the sulcus (5); or allowing said retraction material (1) in the dental dam (2) to get in contact with said sulcus (5);

wherein said retraction material (1) and the material of said dental dam (2) form a covalent chemical bond with each other."

III. According to the decision under appeal, the subject-matter of method claims 1 to 13 and use claim 21 represented methods for treatment by surgery practiced on the human or animal body, excluded from patentability according to Article 53(c) EPC, in view of the criteria laid down in G 1/07 (OJ EPO, 2011, 134). Furthermore, claims 1 to 11, 13 to 19 and 21 to

26 were not novel in view of D2 (EP 1 693 022 A2) which disclosed a process of retraction of sulcus whereby the elastomeric material and the material of the cap could be removed in one piece after curing due to physical and/or chemical adherence to each other. Novel claims 12 and 20, differing from the disclosure in D2 in that the dental dam was covered by an impression or bite tray, were not inventive in view of D2 in combination with the general knowledge of the person skilled in the art, as it was a normal option to include an impression or bite tray in order to solve the problem of preventing the dental dam from being bitten through.

IV. The applicant (appellant) filed an appeal against that decision. With the statement setting out the grounds of appeal, the appellant identified the set of claims 1 to 26 filed with the letter of 7 July 2010 as the main request, corresponding to the set of claims on which the decision had been based.

V. With the communication sent in preparation for oral proceedings the Board expressed a preliminary view on the issue of novelty with respect to D2, and introduced D8 (EP 1 459 701 A1), cited in the description of D2 (paragraph [0015]), into the proceedings in accordance with Article 114(1) EPC. Reference was made in the communication to the embodiment in paragraph [0032] of D2 and to the bond between the expandable silicone material and the plastically deformable material.

VI. With letter of 31 March 2014 the appellant submitted further arguments with respect to novelty of the claimed subject-matter over D2.

VII. Oral proceedings were held on 20 May 2014. Two sets of claims were submitted during oral proceedings as auxiliary requests 1 and 2.

Claim 1 of auxiliary request 1 corresponded to claim 1 of the main request with the addition at the end of the claim of the feature "wherein said dental dam (2) is plastically deformable, and has a Mooney viscosity ML(1+4/23 °C) of 1 - 300 MU." Claim 1 of auxiliary request 2 corresponded to claim 1 of auxiliary request 1 with the addition at the end of the claim of the feature "wherein said dental dam (2) is preformed in a shape that is not individualised to the exact dental situation of a certain patient."

During the oral proceedings novelty of claim 1 of the main request was discussed with respect to a first embodiment of document D2 with reference in particular to paragraphs [0012] and [0024] and novelty of claim 1 of auxiliary request 1 was discussed with respect to a second embodiment of document D2 with reference in particular to paragraph [0032].

VIII. The appellant's arguments, as far as relevant to the present decision, can be summarised as follows:

Main Request - novelty

a) The embodiment according to D2 comprising the steps of applying an elastomeric material onto and/or at the vicinity of the sulcus and applying a cap onto said tooth, characterised in that said cap is deformable, especially under biting pressure (D2, paragraph [0010]), could be distinguished from claim 1 of the main request, in that the material of the cap and that of the

elastomeric material were held together by physical adherence such as friction or chemical adherence such as van der Waals' forces and not by a covalent bond. Furthermore, the passages in D2 according to which the elastomeric material was removed after curing together with the cap (paragraph [0012]), and according to which the cap was preferably made from an elastomeric cured silicone material crosslinkable by addition (paragraph [0024]), did not unambiguously disclose that the material of the cap and the elastomeric material were linked by a covalent bond: according to the method of D2, curing took place first and then the cap was placed on top of the elastomeric material.

b) The conclusion of the examining division that the term "chemical adherence" according to D2 could be equated with the term "covalent chemical bond" according to claim 1 of the main request was wrong, since the latter represented merely one possible type of "chemical adherence". Non-covalent interactions such as ionic bonds, hydrogen bonds and van der Waals' forces could equally be considered as forms of "chemical adherence". Since, according to the case law of the Boards of Appeal, novelty of the specific was not removed by a generic disclosure, novelty was established.

Auxiliary request 1 - admissibility and novelty

c) Auxiliary request 1 was filed as a reaction to the novelty objection against claim 1 of the main request which was first raised in full by the Board at the oral proceedings and had therefore to

be admitted. As to novelty with respect to the embodiment including an expandable silicone material and a plastically deformable material, it was relevant that the dental dam according to the application possessed a particular shape which was adapted to the general shape and dimensions of a dental situation and had a Mooney viscosity which prevented it from unwanted deformation, thus eliminating the requirement of using a separate cap (paragraph [0009] and example, paragraph [0043] in the published application) and was thereby distinguished from the plastically deformable material of D2 in that the latter was flowable and consequently shapeless (D2, paragraph [0016], particularly lines 48-50 and paragraph [0032], particularly lines 34-36).

Auxiliary request 2 - admissibility

d) The newly introduced limitation to claim 1 served to exclude from the definition of a dental dam the "shapeless" plastically deformable material of D2 and thereby distinguished the subject-matter of claim 1 therefrom.

IX. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the main request filed with the letter dated 7 July 2010 or alternatively on the basis of auxiliary requests 1 or 2, both filed during oral proceedings before the Board.

Reasons for the Decision

Main request - novelty

1. D2 discloses a method of sulcus retraction (paragraph [0001]) which comprises as a first step the application of an elastomeric material onto and/or at the vicinity of the sulcus (paragraph [0010], step i.). The elastomeric materials which may be used are those disclosed in D8 (D2, paragraph [0015]) which comprises a single example in which the expandable silicone material consists of two components A and B (D8, paragraphs [0017] and [0018]), in turn identical to the corresponding flowable retraction material employed in the example of the present application (paragraph [0040] of the published application). In accordance with established case law, the relevant part of D8 may be considered as part of the disclosure of D2 for the purpose of novelty (Case Law of the Boards of Appeal, 7th edition 2013, I.C.4.1). It follows therefrom that the expandable elastomeric material of D2 corresponds to the flowable retraction material of claim 1. This fact was conceded by the appellant.

1.1 According to the next step of the claimed method, a dental dam is applied onto said at least one tooth. In the corresponding second step according to the method of D2, a cap is applied onto the tooth, thereby forming a chamber over said silicone material, wherein said chamber comprises as its wall the tooth, the retraction cap and an outer section of said gingiva (paragraph [0010], step ii.). The cap can be *either* partially filled with a plastically deformable material when applied onto said tooth, *or* said cap is deformable, especially under biting pressure. The question arises whether in the second alternative according to D2, the

deformable cap which is applied onto said tooth (without first being filled with a plastically deformable material), is distinguishable from the dental dam according to the method of claim 1 of the main request.

1.1.1 The term "dental dam" is not generally defined in the application. In the field of dentistry, said term would appear to commonly refer to a thin sheet used to isolate one or more teeth from the rest of the mouth, and indeed this is the only use of the term of which the Board is aware. Such a definition however clearly does not fit with what is intended according to the application. The term "dam", which may conceivably only imply a device for blocking or for holding back, must therefore be interpreted broadly and as encompassing material described in the application as being fit for the intended purpose. Such material is that which is suitable to form a chamber over at least a portion of at least one tooth and optionally over an adjacent part of a gingiva (paragraph [0009] of the published application). The dental dam, although being *preferably* plastically deformable (paragraph [0010]), may also be elastic (paragraph [0012], line 55).

1.1.2 The cap according to D2 is in turn made from or essentially comprises an elastomeric material, especially an elastomeric, cured silicone compound which is most preferably crosslinkable by addition (D2, paragraph [0024]). Furthermore, the material of the cap has a particular Shore A hardness which fulfills the requirement of being deformable and/or flexible, especially under biting pressure, in order to assure a sufficiently smooth fit and the efficient and reliable formation of a chamber over the tooth (D2, paragraph [0024]). In addition, according to D2 the cap can be

understood as comprising a "dam-like" design such as *inter alia* three sides open troughs, whereby three sides open troughs in "dental dams" are known from the prior art (paragraph [0018]).

1.1.3 Given the foregoing, the Board can only conclude that the cap according to this specific embodiment of D2, being fit for the intended purpose of the dental dam according to the application, and fulfilling the requirements therefore as laid out in the application, can be considered as such, so that the second step of the method of claim 1 of the main request is disclosed in D2 through the application of the cap onto the tooth (see point 1.1, above).

1.2 The method of claim 1 of the main request further comprises the final step of allowing said dental dam to get in contact with said retraction material if the retraction material has been applied onto the sulcus, wherein said retraction material and the material of said dental dam form a covalent chemical bond with each other.

1.2.1 D2 discloses that the cap forms a chamber over the retraction material comprising as its walls the tooth, the retraction cap, and the outer section of said gingiva (paragraphs [0010] and [0013]). The necessary amount of the expandable elastomeric material and the enclosed free volume of said chamber have to be chosen to allow for a direction of the expansion of the elastomeric material into the sulcus by limiting the free space in the cap (paragraph [0014]). Thus in the embodiment in which the cap itself is deformable, the upper expansion of the elastomeric material is prevented by the cap itself, and the cap necessarily must come in contact with the elastomeric material.

1.2.2 D2 discloses in addition that the elastomeric material is preferably to be removed after curing together with the cap by only hand grip, due to physical and/or *chemical adherence to the suitably chosen cap material*, which can be for example a compatible silicone material or an open-cell foam material (paragraph [0012]). D2 also discloses that the cap is made from or essentially comprises an elastomeric material, especially an elastomeric, cured silicone material, preferably crosslinkable by condensation, most preferably by addition reaction (paragraph [0024]).

1.2.3 The appellant has argued that "chemical adherence" according to D2 does not necessarily indicate that a covalent chemical bond is formed and that the curing of the elastomeric material takes place before application of the cap. The question to be answered is therefore what kind of chemical adherence will result from carrying out the method described in D2.

1.2.4 D2 teaches the use of a *compatible silicone compound* for the cap (paragraph [0012]) and that such a silicone compound is an elastomeric cured silicone compound crosslinkable by condensation or addition (paragraph [0024]). When this material is brought into intimate contact with the crosslinkable expandable elastomeric material of the sulcus, it becomes clear that chemical adherence is achieved by a crosslinking reaction between the respective materials. With the elastomeric material and the material of the cap both being crosslinkable, the sentence "the elastomeric material is preferably to be removed after curing together with the cap by only hand grip" (paragraph [0012] of D2, see point 1.2.2, above) can only be understood as meaning that the two materials are cured together.

1.2.5 It is common general knowledge that curing reactions of crosslinkable silicone polymers lead to the formation of covalent chemical bonds between the respective crosslinked materials. This has not been contested by the appellant and is confirmed by the application under analysis, where the dental dam and the retraction material are also said to have been chemically crosslinked (paragraph [0046]). On that basis, it can be stated that D2 unambiguously discloses the formation of a crosslinking covalent bond between the respective silicone materials to the same extent as the present application.

1.3 It follows that claim 1 of the main request does not meet the requirements of Article 54 EPC.

Auxiliary request 1 - admissibility

2. Auxiliary request 1 was filed during oral proceedings before the Board. Claim 1 thereof is based on a combination of claims 1, 2 and 3 of the main request. This new request was filed after the discussion on novelty of the main request vis à vis D2, which focused on the alternative according to D2 whereby the cap itself was deformable (paragraph [0010], lines 16-17) with reference in particular to paragraphs [0012] and [0024]. Since the communication of the Board in preparation of the oral proceedings had emphasised the alternative whereby the cap is at least partially filled with a plastically deformable material when applied onto said tooth (paragraph [0010], lines 10-12), the concerns of the Board with respect to the novelty over the former alternative were only fully explained to the appellant during oral proceedings.

2.1 Auxiliary request 1 involving the incorporation of dependent claims into the independent claim of the main request was therefore filed as a direct response to the objections raised by the Board. It represents a direct, clear and fair attempt to address the issues raised by the Board without giving rise to new ones and without adding complexity to the case under considerations.

2.2 Consequently, auxiliary request 1 is admitted into the proceedings in accordance with Article 13 RPBA.

Auxiliary request 1 - novelty

3. It has already been established in the context of the main request that D2 discloses a method of sulcus retraction comprising the step of applying a flowable retraction material onto the sulcus of at least one tooth, as required by the first step of the method of claim 1 (see point 1, above).

3.1 According to the next step of the claimed method, a dental dam is applied onto said at least one tooth, with the further limitation that the dental dam is plastically deformable and has a Mooney viscosity within a specific range. Since the cap according to D2 is described as being made from or essentially comprising an elastomeric material (D2, paragraph [0024]), it follows that the cap of D2 can no longer be considered as a dental dam according to claim 1 of auxiliary request 1.

3.2 According to the alternative embodiment of D2 (paragraph [0010], lines 10-12), the cap according to D2 may be filled with a plastically deformable silicone material when applied onto said tooth. Since the material of the dental dam according to claim 1 of

auxiliary request 1 is also described as being a plastically deformable material, the question arises as to whether the plastically deformable material of D2 is distinguishable from the dental dam within the scope of claim 1.

3.2.1 While the Board does not dispute that a dental dam as described by the appellant as having a particular shape which is adapted to the general shape and dimensions of a dental situation is described in the application, the evidence provided in the description of the application indicates that it is to be more broadly defined. Indeed, the dental dam has a Mooney viscosity in the range of 1-300 MU, which although being described as being sufficient to prevent the dam from unwanted deformation and eliminate the requirement of using a separate cap (paragraph [0010]) is in apparent contradiction with the example of the application describing a solid divinylpolydimethylsiloxane silicone which, *due to* its Mooney viscosity of about 100-200 MU, is not flowable but remains in its position and shape and thereby requires no further cap (paragraph [0043]). The Board understands herefrom that in order not to be flowable, a dental dam must have a Mooney viscosity of above 100 MU and that conversely, a dental dam having a Mooney viscosity well below 100 is flowable. Furthermore, the statement whereby the dental dam according to the application may be covered by an impression or bite tray, which may add to the dimensional stability when the viscosity of the dental dam requires it (paragraph [0023]), implies that a dental dam is also contemplated in which the viscosity is such that deformation occurring without direct forces (such as biting pressure) being applied to the dental dam is *not* prevented (i.e. the material has some flowability).

3.2.2 Given the foregoing, the Board is left with no doubt that a dental dam according to claim 1 having a Mooney viscosity at the lower end-point of the claimed range (1 MU) is a flowable material otherwise indistinguishable from the flowable plastically deformable material disclosed in D2.

3.3 The plastically deformable material of D2 comes into intimate contact with the expandable silicone material that has been applied to the sulcus (column 9, lines 1-5), thus fulfilling the requirement of claim 1 that the dental dam gets in contact with the retraction material if the retraction material has been applied onto the sulcus.

3.4 Finally, claim 1 of auxiliary request 1 requires that said retraction material and the material of the dental dam form a covalent bond with each other. The appellant both in the letter of 31 March 2014 (page 3, lines 1-3 and lines 16-18) and during oral proceedings before the Board conceded that the expandable material and the plastically deformable material of D2 undergo a covalent chemical linkage. In any case, it can be deduced from D2 that both the retraction material and the plastically deformable material comprise addition-crosslinkable silicones (paragraphs [0015] and [0029]), the former being identical to the retraction material used in the example of the application and the latter being applied prior to its complete curing (paragraph [0032]). The nature of the bond formed according to the respective embodiments of the application and D2 is therefore identical.

3.5 It follows that claim 1 of the first auxiliary request does not meet the requirements of Article 54 EPC.

Auxiliary request 2 - admissibility

4. Auxiliary request 2 was submitted during oral proceedings before the Board.

4.1 This request cannot be considered as a reaction to a new situation having arisen during the oral proceedings. Specifically, it had been made clear with the communication of the Board in preparation for oral proceedings (see in particular sections 2.1 to 2.3), that the embodiment of D2 in which the expansible silicone material and the plastically deformable material form a covalent bond was considered to be novelty destroying. No further justification has been given by the appellant for the late filing.

4.2 The added feature (the specification that the dental dam is preformed in a shape that is not individualised to the exact dental situation of a certain patient) does not *prima facie* establish the novelty of the claim, since even a flowable material inserted in a cap according to the process of D2 could be conceivably considered as preformed in a non-individualised manner.

4.3 Furthermore, the added feature is based on the description as filed and in the view of the Board raises new issues in relation to the clarity thereof, as it is not clear which limitation is introduced by the feature and how a non-individualised shape can be distinguished from an individualised one.

4.4 As there is no justification for the late filing of the request and, in addition to raising new issues, it is not apparent how said request could solve the crucial issue of novelty, the Board in exercising its

discretion under Article 13(1) of the Rules of Procedure of the Boards of Appeal finds it appropriate not to admit auxiliary request 2 into the proceedings.

Conclusion

5. As all requests on file do not meet the requirements of Article 54 EPC, there is no need for the Board to decide on any other issue and the appeal is to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

S. Fabiani J. Riolo

Decision electronically authenticated