BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS

BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE

CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS

Internal distribution code:
(A) [ ] Publication in OJ
(B) [ ] To Chairmen and Members
(C) [X] To Chairmen
(D) [ ] No distribution

Datasheet for the decision of 3 July 2007

Case Number: T 0961/05 - 3.2.04

Application Number: 96939620.9

Publication Number: 0918477

IPC: A46D 1/00

Language of the proceedings: EN

Title of invention:
Gum-massaging oral brush

Patentee:
The Gillette Company

Opponents:
The Procter & Gamble Company
McNeil-PPC, Inc.

Headword:
-

Relevant legal provisions:
EPC Art. 100a

Keyword:
"Inventive step (no)"

Decisions cited:
-

Catchword:
-

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0961/05 - 3.2.04

D E C I S I O N
of the Technical Board of Appeal 3.2.04
of 3 July 2007

Appellant: (Patent Proprietor)
The Gillette Company
Prudential Tower Building
Boston, Massachusetts 02199 (US)

Representative:
HOFFMANN EITLE
Patent- und Rechtsanwälte
Arabellastraße 4
D-81925 München (DE)

Respondent: (Opponent II)
McNeil-PPC, Inc.
Grandview Road
Skillman, NJ 08558-9418 (US)

Representative:
Metten, Karl-Heinz
Forrester & Boehmert
Pettenkoferstraße 20-22
D-80336 München (DE)

Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 8 June 2005 revoking European Patent No. 0918477 pursuant to Article 102(1) EPC.

Composition of the Board:

Chairman: M. Ceyte
Members: C. Scheibling
H. Preglau

Summary of Facts and Submissions

I. By its decision dated 8 June 2005 the Opposition Division revoked the patent. On 22 July 2005 the Appellant (patentee) filed an appeal and paid the appeal fee simultaneously. The statement setting out the grounds of appeal was received on 14 October 2005.

II. The following documents played a role in the present proceedings:

D1(D1A): JP-U-1-72128 and its translation into English
D9: US-A-5 040 260
D15: "Physical Properties Guide for Santoprene ® Rubber".

III. The opposition was filed on the grounds based on Article 100a) and b) EPC.

The Opposition Division revoked the patent on the ground of lack of inventive step.

IV. Claim 1 as granted reads as follows:

"1. An oral brush (10) suitable for massaging the gums, comprising:
an elongated handle (12);
a head portion (14), sized for insertion in a human mouth, extending from an end of said handle (12); and
a brush portion (16) comprising a plurality of bristles extending from said head portion (14), characterized in that said plurality of bristles, comprises:
(a) a plurality of first bristles (20) extending from said head portion (14), said first bristles (20)

comprising a thermoplastic elastomer which is a styrene-ethylene-butylene-styrene block copolymer, a styrene-butadiene-styrene block copolymer, a styrene-isoprene-styrene block copolymer, a polyolefin elastomer, or a mixtures of any two or more of said elastomers, and having a Shore A hardness of 30 or greater and a flexural modulus of at least 5 MPa and (b) a plurality of second bristles (18) extending from said head portion (14) comprising a non-elastomeric material."

Claim 1 according to the first auxiliary request reads as follows:

"1. An oral brush (10) suitable for massaging the gums, comprising:
- an elongated handle (12),
- a head portion (14), sized for insertion into the human mouth, extending from an end of said handle (12), and
- a brush portion (16) comprising a plurality of bristles extending from said head portion (14),
wherein said plurality of bristles, comprises
a) a plurality of first bristles (20) extending from said head portion (14), said first bristles (20) comprising a thermoplastic elastomer which is
- a styrene-ethylene-butylene-styrene block copolymer,
- a styrene-butadiene-styrene block copolymer,
- a styrene-isoprene-styrene block copolymer,
- a polyolefin elastomer, or
- a mixtures of any two or more of said elastomers, and

b) a plurality of second bristles (18) extending from said head portion (14) comprising a non-elastomeric material,
characterized in that
said thermoplastic elastomer has a Shore A hardness of 35 to 55 and a flexural modulus of from about 5 to 100 MPa."

Claim 1 according to the second auxiliary request reads as follows:

"1. An oral brush (10) suitable for massaging the gums, comprising:
- an elongated handle (12),
- a head portion (14), sized for insertion into the human mouth, extending from an end of said handle (12), and
- a brush portion (16) comprising a plurality of bristles extending from said head portion (14),
wherein said plurality of bristles, comprises
a) a plurality of first bristles (20) extending from said head portion (14), said first bristles (20) comprising a thermoplastic elastomer which is
- a styrene-ethylene-butylene-styrene block copolymer,
- a styrene-butadiene-styrene block copolymer,
- a styrene-isoprene-styrene block copolymer,
- a polyolefin elastomer, or
- a mixtures of any two or more of said elastomers, and
b) a plurality of second bristles (18) extending from said head portion (14) comprising a non-elastomeric material,
characterized in that

said first bristles (20) include an oil plasticizer and the thermoplastic elastomer has a Shore A hardness of at least 30 and a flexural modulus of at least 5 MPa."

Claim 1 according to the third auxiliary request reads as follows:

"1. An oral brush (10) suitable for massaging the gums, comprising:
- an elongated handle (12),
- a head portion (14), sized for insertion into the human mouth, extending from an end of said handle (12), and
- a brush portion (16) comprising a plurality of bristles extending from said head portion (14),
wherein said plurality of bristles, comprises
a) a plurality of first bristles (20) extending from said head portion (14), said first bristles (20) comprising a thermoplastic elastomer which is
- a styrene-ethylene-butylene-styrene block copolymer,
- a styrene-butadiene-styrene block copolymer,
- a styrene-isoprene-styrene block copolymer,
- a polyolefin elastomer, or
- a mixtures of any two or more of said elastomers, and
b) a plurality of second bristles (18) extending from said head portion (14) comprising a non-elastomeric material,
characterized in that
said first bristles (20) include an oil plasticizer and the thermoplastic elastomer has a Shore A hardness of 35 to 55 and a flexural modulus of from about 5 to 100 MPa."

V. Oral proceedings took place on 3 July 2007 before the Board of Appeal.

The Appellant requested that the decision under appeal be set aside and that the patent be maintained as granted (main request), or in the alternative on the basis of a set of claims according to one of the auxiliary requests 1 to 3, filed during the oral proceedings.

He mainly argued as follows:
D1 (D1A) is regarded as the closest prior art. It discloses all the features of claim 1 as granted except that the thermoplastic elastomer has a Shore A hardness of 30 or greater and a flexural modulus of at least 5 MPa. The problem to be solved by the claimed invention with respect to D1(D1A) is to improve gum massaging, to provide good comfort and gum stimulation, while also providing good cleaning of the teeth. A skilled person seeking to solve this problem would not consider D9, since this citation does not relate to a toothbrush comprising two types of bristles, but teaches to replace the nylon cleaning bristles by elastomeric ones. Furthermore, the bristles described in D9 do not serve for massaging purposes. D9 cites Santoprene ® as thermoplastic elastomer by way of example, but does not indicate the suitable ranges for hardness and flexibility. Consequently D9 cannot lead the skilled person to the subject-matter of claim 1 of the main request.

Claim 1 of the first auxiliary request limits the ranges for hardness and flexibility of the thermoplastic

elastomer to further improve comfort of the toothbrush. These claimed ranges are not disclosed in the cited documents and especially the Santoprene ® elastomers grades listed in D15 do not exhibit the claimed properties.

The second auxiliary request further proposes to add an oil plasticizer to the bristle material, in order to limit friction and thus to contribute to the massaging effect and to provide better comfort. The sole document mentioning oil plasticizers is D9 which teaches to avoid such oil plasticizers.

The third auxiliary request combines the additional features of the first and second auxiliary request and thus further optimises the claimed toothbrush by combining the resulting effects.

The Respondent (opponent II) contested the arguments of the Appellant and submitted that the subject-matter of claim 1 as granted (main request) is rendered obvious by a combination of the disclosures of D1 (D1A) and D9 in the light of D15.

The ranges claimed in the first auxiliary request are chosen arbitrarily and the first Santoprene ® elastomer grade disclosed in D15 falls within the claimed ranges. The use of an oil plasticizer as lubricant (second auxiliary request) is common knowledge in the art.

The third auxiliary request comprises a combination of the additional features of the first and second auxiliary requests, so that the arguments forwarded with respect to these requests apply likewise to the third

auxiliary request. Therefore, the first, second and third auxiliary requests do not involve an inventive step either.

The Respondent requested that the appeal be dismissed.

Opponent I withdrew his opposition with letter dated 4 November 2005.

Reasons for the Decision

1. The appeal is admissible.

2. *Main request - inventive step of claim 1:*

2.1 The Board agrees with the parties that the toothbrush of claim 1 as granted differs from that of D1 (D1A) in that the thermoplastic elastomer bristles have a Shore A hardness of 30 or greater and a flexural modulus of at least 5 MPa.

2.2 The Appellant considered that the problem to be solved by the claimed invention with respect to D1 (D1A) is to improve gum massaging to provide good comfort and gum stimulation while good cleaning of the teeth is still achieved.

D1(D1A) relates to a toothbrush "offering high cleaning/massaging action, posing no risk of injury to gums etc., having excellent durability" (page 3, three last lines). Thus, D1 (D1A) already solves the problem of providing good cleaning of the teeth.

The Appellant conceded during the examination of the patent application in his letter dated 2 November 2000, that there is an upper limit to hardness in order to still provide good comfort (not to cause pain). Since claim 1 does not comprise such an upper limit, the toothbrush according to claim 1 cannot solve the problem of providing good comfort.

Accordingly, the remaining objective problem to be solved is to select suitable thermoplastic elastomers for the first bristles for improving gum massaging.

2.3 D9 describes a "durable tooth brush head which is effective for cleaning and polishing teeth, and massaging and stimulating the gums, without injury to the hard of soft tissues" (column 1, lines 6 to 10). It is further stated "The head is designed to additionally massage, stimulate and protect the gums" (column 2, lines 59 to 61). To this effect, D9 proposes a brushing structure comprising integral projections constructed of a thermoplastic elastomeric compound which has physical properties similar to rubber (column 2, lines 62 to 68). The required properties for the elastomer are to be soft and flexible (column 3, lines 23 and 24 and column 4, lines 63 to 65). Santoprene ® is cited as sole example of a suitable thermoplastic elastomer (column 3, lines 19 to 21) and is said to be in this respect one of the most effective elastomeric alloys (column 5, lines 1 and 2).

2.4 Therefore, a skilled person faced with the problem of selecting an elastomer for improving gum massaging in a toothbrush according to D1 (D1A) would have been

motivated to use Santoprene ® in view of its gum massaging properties.

2.5 D15 which is a physical properties guide for Santoprene ® Rubber shows (tables I and II) that all grades cited therein exhibit a Shore A hardness greater than 30 and a flexural modulus of at least 5 MPa.

2.6 The Appellant argued that a skilled person would not take D9 into consideration because the toothbrush of D9 has only one single type of bristles, which are designed for cleaning the teeth and not for massaging them.

However, the problem to be solved is to select a suitable elastomer for the bristles performing gum massaging. Whether the toothbrush of D9 comprises two types of bristles or not, is irrelevant as long as the bristles of D9 perform gum massaging.

This effect is addressed in different passages of the description of D9 quoted in section 2.3 above, which refer to the toothbrush head being effective for massaging an stimulating the gums. In this context, the word "head" refers to the whole of the head including the bristles and not solely to the support surface as suggested by the Appellant, since it is likewise said in D9 that the toothbrush head is effective for cleaning and polishing teeth.

The Appellant has also submitted that in D9 the massaging effect would be obtained by the lip and not by the bristles. This cannot be accepted either, since there is no basis in D9 for such an assertion. In column 3, lines 16 to 18 it is said "A lip, also a

thermoplastic elastomer, surrounds the perimeter of the head and acts as a bumper for protecting the gums". From this passage it is clear that the "lip" is designed to protect the gums from being hurt by the bristle support surface of the head, but not that this lip serves to massage the gums.

The Appellant further argued that if a skilled person had to apply the teaching of D9 to the toothbrush of D1 (D1A) he would also replace nylon bristles of D1 (D1A) by elastomeric bristles as taught by D9. This cannot be accepted. The problem to be solved by the skilled person is not to design a new toothbrush but solely to find an adequate elastomer for the bristles performing gum massaging in a toothbrush according to D1 (D1A). Therefore, the skilled person would only consider whether the toothbrush of D9 performs gum massaging and which type of elastomer is used for forming the bristles performing this gum massaging.

Finally the Appellant argued that a skilled person would not be incited by D9 to use a Santoprene ® elastomer, since this elastomer is only cited as an example. However, this elastomer is the sole reference cited in D9 and furthermore, it is said to be one of the most effectives. Thus, the skilled person is clearly advised to use either Santoprene ® or an elastomer having comparable properties.

2.7 Consequently, the subject-matter of claim 1 according to the main request (as granted) does not involve an inventive step.

3. *Admissibility of the amended auxiliary requests:*

The Respondent requested that the amended auxiliary requests 1 to 3 filed during oral proceedings be not admitted into the proceedings.

However, the amended auxiliary requests 1 to 3 filed together with the grounds of appeal have been slightly amended in response to an objection under Article 100(c) (123(2)) EPC raised for the first time by the Respondent during the oral proceedings, so that they cannot be considered as late filed.

4. *First auxiliary request:*

4.1 Amendments:

Claim 1 of the first auxiliary request comprises all features of claim 1 as granted and the following additional features that "said thermoplastic elastomer has a Shore A hardness of 35 to 55 and a flexural modulus of from about 5 to 100 MPa."

These features are disclosed in the application as filed (WO-A-97/16995) page 7, lines 31 to 34.

4.2 Inventive step:

The problem to be solved with respect to D1 (D1A) can now be seen in determining suitable elastomers for the first bristles, which improve gum massaging and provide good comfort.

The first reference given in the tables of D15 concerns the Santoprene ® rubber grade 201-55, 101-55 which has a Shore A hardness of 55 and a flexural modulus of 7.8 MPa. Since the claimed range is "of 35 to 55" a hardness of exactly 55 falls into the claimed hardness range, whereas a flexural modulus of 7.8 MPa falls in the claimed range of 5 to 100 MPa.

The Appellant argued that only one out of all the Santoprene ® rubber grades listed in D15 would hardly fall into the claimed range, so that even if the skilled person selected for the first bristles a Santoprene ® rubber mentioned in D9, he would not necessarily arrive at the claimed subject-matter.

However, the question is whether a skilled person would seriously contemplate using the Santoprene ® rubber grade 201-55, 101-55 for realising the first bristles. As a matter of fact, D9 repeatedly refers to the thermoplastic elastomer being soft and flexible (column 3, lines 23 and 24 and column 4, lines 63 to 65). It is clear for a skilled person that these properties are essential for good comfort. Consequently, a skilled person would be induced to use the elastomer grade which, within all the suitable elastomer grades, exhibits the lowest Shore A hardness and the lowest flexural modulus. In the present case this is precisely the grade referenced 201-55, 101-55 (D15 tables I and II) which exhibits a hardness and a flexural modulus within the claimed ranges.

Consequently, the subject-matter of claim 1 according to the first auxiliary request does not involve an inventive step.

5. *Second auxiliary request:*

5.1 Amendments:

Claim 1 of the second auxiliary request comprises all features of claim 1 as granted and the following additional feature "said first bristles (20) include an oil plasticizer".

This feature is disclosed in WO-A-97/16995, page 10, lines 33 to 35.

5.2 Inventive step:

There is no indication in the patent in suit what the purpose of including such an oil plasticizer could be, i.e. which problem it solves and whether this problem is in some way connected to the actual problem underlying the invention, namely to determine suitable elastomers for forming the first bristles.

It is however of common knowledge in the art that thermoplastic elastomeric material can include an oil plasticizer which desirably lowers the coefficient of friction of the elastomeric bristles. This particular effect is also disclosed in D9, column 2, lines 33 to 35.

The Appellant argued that D9 teaches to avoid such oil plasticizers. Nevertheless, the friction reducing effect of an oil plasticizer is disclosed in D9, although it is also explained that this effect is detrimental to the cleaning and polishing performance. However, in D1 (D1A) cleaning and polishing is performed by the nylon

bristles and it is clear that reducing the friction of the elastomeric bristles which perform the massaging action would have a favourable influence on the comfort.

Therefore, to include a known additive (oil plasticizer) to elastomeric bristles to obtain the known effect usually obtained therewith, cannot make an inventive contribution to an otherwise obvious brush construction comprising these bristles.

Consequently, the subject-matter of claim 1 according to the second auxiliary request does not involve an inventive step.

6. *Third auxiliary request:*

Claim 1 of the third auxiliary request contains all the features of claim 1 of the first auxiliary request and the additional feature that "the first bristles include an oil plasticizer".

As already stated, it is general knowledge that the coefficient of friction of an elastomer may be reduced by the incorporation of plasticizer oil. This additional feature cannot therefore make an inventive contribution to the claimed tooth brush.

It is also observed that the synergetic effect alleged by the Appellant cannot be derived from the patent in suit and that the Appellant has not submitted evidence in support of this allegation.

Accordingly, the subject-matter of claim 1 of the third auxiliary request does not involve an inventive step either.

Order

For these reasons it is decided that:

The appeal is dismissed.

The registrar: The Chairman:

G. Magouliotis M. Ceyte