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**D E C I S I O N**  
**of 13 July 1995**

**Case Number:** T 0341/94 - 3.3.2

**Application Number:** 88103994.5

**Publication Number:** 0297211

**IPC:** A61K 7/00

**Language of the proceedings:** EN

**Title of invention:**  
Oral compositions

**Patentee:**  
THE PROCTER & GAMBLE COMPANY

**Opponent:**  
Henkel Kommanditgesellschaft auf Aktien  
Colgate-Palmolive

**Headword:**  
Oral compositions/PROCTER III

**Relevant legal provisions:**  
EPC Art. 56, 76(1), 123

**Keyword:**  
"Divisional does not extend beyond disclosure of parent  
application"  
"Inventive step - no - obvious alternative composition"

**Decisions cited:**  
T 0119/82; T 0028/92; T 0098/94

**Catchword:**

-



Case Number: T 0341/94 - 3.3.2

**D E C I S I O N**  
of the Technical Board of Appeal 3.3.2  
of 13 July 1995

**Appellant:**  
(Proprietor of the patent)

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**Respondent:**  
(Opponent 01)

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**Representative:**

-

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**Decision under appeal:**

Decision of the Opposition Division of the  
European Patent Office dated 24 February 1994  
revoking European patent No. 0 297 211 pursuant to  
Article 102(1) EPC.

**Composition of the Board:**

**Chairman:** P. A. M. Lançon  
**Members:** I. A. Holliday  
S. C. Perryman

## Summary of Facts and Submissions

I. European patent No. 0 297 211 was granted on the basis of eight claims contained in European patent application No. 88 103 994.5. The application was a divisional from European patent application No. 83 303 417.6 (publication No. 0 097 476). Both divisional and parent claimed priority from US application No. 391 040 filed on 22 June 1982.

II. Two oppositions were filed against the granted patent. The Opposition Division considered that the objection under Article 100(c) EPC was without basis and that the main request and the seven auxiliary requests all satisfied the requirements of Article 123(2).

The Opposition Division considered US-A-3 934 002 (2) (Haefele) to be the closest state of the art and held that fluoride ion and pyrophosphate ion concentrations within the ranges claimed by the patent in suit were disclosed. Calcium pyrophosphate, the preferred abrasive of the patent in suit is suggested in Haefele only in proportions greater than those required by Claim 1 in a tooth powder. The other abrasives suggested in Haefele are excluded by the disclaimer of the patent in suit. Novelty was thus conceded for the main request and the seven auxiliary requests. However, since the essential feature was merely substituting another dental abrasive into the compositions known from Haefele, the claims of all of the requests were held to lack inventive step.

III. The Appellant lodged an appeal against the decision of the Examining Division; oral proceedings took place on 13 July 1995.

IV. The arguments of the Appellant both in the written procedure and during the oral proceedings may be summarised as follows:

The Appellant explained that the claims of the present divisional application had been formulated to exclude the abrasives claimed in the parent patent EP-B-0 097 476. In other words, there was nothing inventive in the choice of abrasive; the invention belonged to the general concept of using a combination of fluoride and pyrophosphate ions in a toothpaste.

Firstly, the Appellant argued that it was essential that the oral compositions of the patent in suit contained at least 1.5% by weight of the free pyrophosphate ions dissolved in the water forming part of the toothpaste. The Appellant maintained that not one of the prior art oral compositions contained free pyrophosphate ions in such a high amount. Affidavits were filed in support of this argument.

The main thrust of the Appellant's arguments in favour of inventive step was that at the priority date, i.e. in June 1982, a prejudice existed which would have inhibited one skilled in the art from using an oral composition containing both fluoride and pyrophosphate ions. It was further argued that such prejudice persisted long after the priority date; papers and patents published as late as 1992 were filed in support of this argument. The pyrophosphate would have been expected to be unstable both due to hydrolysis and by enzyme degradation caused by pyrophosphatase present in human saliva. Furthermore, the pyrophosphate ions would have been expected to interfere with the known remineralisation effect of the fluoride ions. Several declarations were filed by experts in the field of dentistry and oral hygiene in order to support this

view. Experts had advised the Appellants, at an early stage in the research programme, to discontinue the project.

Each of the documents filed in the course of the present proceedings was analysed, in particular Haefele. The Appellant argued that Haefele was particularly concerned with compositions containing bis-biguanide anti-plaque agents which were known to stain teeth. The anticalculus agents used in Haefele inhibited this staining. Although Haefele mentions monosodium pyrophosphate, it is not amongst the preferred anticalculus agents. Whilst admitting that Haefele referred to the presence of fluoride ions "to provide additional anticaries effectiveness", the Appellant maintained that there was no single passage in the document which disclosed the combined presence of  $F^-$  and  $P_2O_7^{4-}$  ions. Even if the skilled person combined the various teachings of Haefele, it was most unlikely that a composition having free ionic species in the proportions required by Claim 1 would be obtained. A variety of reasons were given in support of these arguments including complexing of pyrophosphate ions with the abrasives and the action of pyrophosphatase enzyme in human saliva. It was emphasised that the pyrophosphates of the patent in suit were used in considerably higher proportions than the diphosphonate anticalculus agents of the prior art. Several declarations were filed in support of the above arguments. The Appellant argued that proper weight should be given to the testimony of experts.

In later written submissions, the Appellant sought to introduce three further auxiliary requests numbered eight, nine and ten; these requests were, however, withdrawn at the oral proceedings before the Board.

V. Both in the written procedure and during the oral proceedings, the Respondents argued essentially as follows:

In response to the statement of appeal, Respondent (02) referred to several US applications mentioned in Haefele arguing that its specific description together with the references contained therein incorporated a disclosure which destroyed the novelty of the patent in suit. This argument was not pursued at the oral proceedings.

Both Respondents denied the existence of any prejudice in the art against the combined use of fluoride and pyrophosphate ions. It was argued that such a prejudice must be discernible from the technical literature published before the priority date and not from the statements of experts made subsequent to the said priority date. Affidavits were filed by the Respondents which called into question the existence of any such prejudice.

The Respondents argued that there was no reference in the documents originally filed with the parent application nor in those of the present divisional application either to "free pyrophosphate ions" or to the figure of 1.5% by weight of pyrophosphate ions as meaning ions actually dissolved in water. The Respondents maintained that the amount of " $P_2O_7^{-4}$ " mentioned in Claim 1 of the patent in suit was merely an index for measuring the total content of soluble pyrophosphate irrespective of whether it has dissolved or not. One Respondent referred to point 3.2.5 of decision T 28/92 relating to the parent patent No. 0 097 476 according to which the present Board decided against the Appellant.

It was pointed out that there was a conflict between the Appellant's argument that pyrophosphate would be unstable in an oral composition and the allegation that such pyrophosphate would act as demineralising agent. In any event, there was strong counter evidence that pyrophosphate had the opposite effect, i.e. acting to protect dental enamel against erosion.

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

"1. An oral composition in the form of a toothpaste comprising:

- (a) from 10% to 70% by weight of a dental abrasive;
- (b) an amount of fluoride ion source capable of providing from 50 ppm to 3500 ppm of fluoride ions;
- (c) an amount of pyrophosphate salt selected from diakali metal and mixtures of diakali metals and tetraalkali metal pyrophosphate salts sufficient to provide at least 1.5% by weight of pyrophosphate ions ( $P_2O_7^{-4}$ ;) and
- (d) water;

wherein the pH of said composition is from 6.0 to 10.0 and the composition does not contain more than 4.0% by weight of tetrapotassium pyrophosphate ( $K_4P_2O_7$ ), and wherein are excluded compositions wherein the dental abrasive is selected from insoluble metaphosphate, alumina, thermosetting polymerized resins, and silica and mixtures thereof."

According to the first auxiliary request feature (c) is restricted to mixtures of dialkali metal and tetraalkali metal salts. The second auxiliary request limits feature (c) to sodium and potassium salts. Feature (c) of the third auxiliary request is restricted to mixtures of disodium, tetrasodium and tetrapotassium

pyrophosphate. Auxiliary requests (4) and (5) are similar in scope to requests (1) and (2) respectively but each disclaims compositions containing a bis-biguanide anti-plaque agent. The sixth auxiliary request relates to a method of producing an oral composition by mixing components (a) to (d) as expressed in the second auxiliary request. The seventh auxiliary request relates to the use of an amount of a pyrophosphate salt as "anticalculus agent in an anticalculus oral composition in the form of a toothpaste"; it also disclaims this use in conjunction with the use of a bis-biguanide anti-plaque agent.

VII. The Appellant requests that the decision of the Opposition Division be set aside and that the patent be maintained on the basis of the main request or on one of the auxiliary requests one to seven as annexed to the decision of the Opposition Division dated 24 February 1994.

The Respondents request that the appeal be dismissed.

### **Reasons for the Decision**

1. The appeal is admissible.
2. *Admissibility of the requests*
  - 2.1 The disclaimer to the abrasives actually claimed in the parent patent EP-B-0 097 476 delimits the subject-matter of Claim 1 of main request therefrom.



2.2 The limitation of the first auxiliary request is derived by disclaiming the single use of dialkali metal pyrophosphate. The second auxiliary request can be derived from Claims 5 and 6 of the originally filed parent application and the third auxiliary request from Claim 6 alone.

2.3 It is to be noted that the second complete paragraph on page 14 of the originally filed parent application refers to the optional use of bis-biguanide antiplaque agents and furthermore contains a reference to Haefele. There is thus no objection to disclaiming the conjoint use of such antiplaque agents in auxiliary requests 4 and 5 with a view to distinguishing from Haefele.

2.4 The method expressed by the sixth auxiliary request is allowable for the same reason as that applying to the second such request.

2.5 The use, which is the subject-matter of the seventh auxiliary request finds basis in Claims 1, 5 and 6 of the parent application; the disclaimer to the conjoint use of bis-biguanides is also allowable for the reasons outlined above.

2.6 The requirements of Articles 76(1) and 123 are thus satisfied.

3. *Disclosure of the invention (Article 83 EPC)*

Although the specification contains no worked examples, the Board is satisfied that the skilled person would have no difficulty in carrying it out using his ordinary skill and knowledge and employing a dental abrasive which is not on the disclaimer list.

4. *Novelty*

4.1 In considering novelty, the Opposition Division decided that the subject-matter of the main request was novel not only over Haefele but US-A-2 876 167 (1), US-A-3-577 521 (5) and CA-A-570 803 (9) which were also discussed in detail. The Board has no reason to differ from the conclusions of the Opposition Division and, since novelty was not in dispute at the oral proceedings, does not consider further discussion on this to be necessary.

4.2 It is also to be noted that DE-A-2 811 097, the basis for the revocation of the parent patent in decision T 28/92 is not relevant to the novelty of the present divisional appreciation since the abrasive involved therein is excluded by the disclaimer.

5. *Problem and Solution*

5.1 The Board can share the view taken by the Opposition Division that Haefele represents the closest prior art. Haefele relates to oral compositions including toothpastes which contain bis-biguanide as antiplaque agents. Preferred compositions, including those exemplified also contain fluoride within the range specified in Claim 1 of the main request. According to Example XX of Haefele, the anticalculus agent may be sodium pyrophosphate (column 15, line 31). The concentration of anticalculus agent may be 0.1 to 10% by weight of the finished composition (column 7, lines 2 to 6).

5.2 The problem underlying the patent in suit can be seen in providing compositions as alternatives to those disclosed in Haefele. The Board accepts as plausible that the problem has been solved.

6. *Inventive Step of the main request*

6.1 A party to proceedings before the EPO who wishes to rely on prejudice, which might have diverted the skilled person away from the alleged invention, has the onus of demonstrating the existence of such prejudice (see T 119/82, OJ EPO 1984, 217, Reasons Point 14). The Appellant sought to demonstrate the existence of such a prejudice relating to the combined use of pyrophosphate and fluoride ions in oral compositions by filing a number of declarations from experts eminent in the field of dentistry and oral hygiene; examples of such declarations are those of Featherstone (18 december 1990), Arends (12 February 1992 and 27 February 1992), Briner (4 July 1992) and Leonard (15 March 1993). The validity of the arguments in the above mentioned declarations was, however, called into question by affidavits filed on behalf on the Respondent's by van Wazer (27 July 1992) and Glantz (21 September 1993), the latter being based on a review of the literature from the early 1970's up to the priority date.

6.1.1 A definition of "prejudice" which is useful in the context of inventive step can be found in the Shorter Oxford Dictionary (1993 edition), namely "a preconceived or anticipatory judgement; a preconceived idea of what will happen". In other words, a prejudice in any particular field relates to an opinion or preconceived idea widely or universally held by experts in that particular field. The existence of such prejudice is normally demonstrated by reference to the literature or to encyclopedias published before the priority date. The prejudice must have existed at the priority date; any prejudice which might have developed later is of no concern in the judgement of inventive step. Thus, Pader, Cosmetics and Toiletries, March 1962, 63-70 cannot be relied upon as a demonstration of prejudice since it was

published some 10 years after the priority date. A prejudice in the field of oral compositions must not be confused with a reasonable fear regarding the safety of a product which has not yet been clinically tested. Such a fear can be dispelled with appropriate clinical tests, a view expressed by Newbrunn in his declaration dated 10 September 1993.

In considering the question of prejudice, the Board will take into consideration only documents published before the priority date.

6.1.2 An article by Rapp et al., J. Dental Research, 39, 372 to 376 (1960) investigated the effects of pyrophosphate solutions at pH 5-7.5 on tooth erosion. It was postulated that pyrophosphatase enzyme, found in human saliva, destroyed the pyrophosphate since no pyrophosphate could be found in human saliva residues, An exception was the case when the pyrophosphate had been allowed to incubate in the presence of low concentrations of NaF. It was concluded that pyrophosphate occurring in fermentation mixtures was capable of decalcifying tooth substance; in other words, that pyrophosphate could be a factor in the demineralisation of tooth enamel.

6.1.3 Later work brought to the attention of the Board concentrated on using pyrophosphate as anticalculus agents. Draus et al, Archiv. Oral Biol., 15 893 to 896 (1970) describes *in vitro* experiments in which sodium pyrophosphates were shown to inhibit calculus formation. It was reported that pyrophosphatase in saliva may hydrolyse the pyrophosphate and reduce its effect. *In vitro* experiments by Regolati and Holz, Helv. odont. Acta, 14, 24 (1970) indicated that both pyrophosphates and the chemically related diphosphonates inhibited fluoride uptake on hydroxyapatite (chemically equivalent

to calculus). These findings were not, however, confirmed by *in vivo* experiments with rats by Regolati and Mühlemann, *Helv. odont. Acta*, **14**, 37 (1970) where it was found that simultaneous application of fluoride and diphosphonate enhanced the uptake of the fluoride. Briner and Francis, *Calc. Tiss. Res.*, II 10 to 22 (1973) reported that pyrophosphates and polyphosphates (including pyrophosphates) inhibited calculus formation on the teeth of rats. There was argument between the parties as to whether experiments with rats had predictive value for humans as rat saliva was alleged not to contain pyrophosphatase. As far as the Board could construe the evidence, experiments with rats are useful in predicting behaviour in the human mouth although rats do not salivate continuously as is the case with humans.

- 6.1.4 The patent literature published before the priority date of the patent in suit supports the use of pyrophosphates as anticalculus agents and their use in conjunction with fluorides. As early as 1938, GB-A-490 384 mentions the use of alkali metal pyrophosphates for dissolving tartar in tooth cleaning compositions. Fluorides and pyrophosphates are used together in US-A-2 876 107(1). As indicated above, Haefele relates to oral compositions containing bis-biguanides antiplaque agents together with anticalculus agents including monosodium pyrophosphate (column 3, lines 24 to 25). The composition preferably also contains fluoride within the range specified in the patent in suit (col. 10, lines 65 ff). DE-A-2 811 097 (and its post published equivalent US-A-340 583), discussed at length in decision T 28/92, also relates to compositions in which pyrophosphates anticalculus agents and fluorides may be used together. Not one of the above documents, quoted as examples of

those published before the priority date, contain any warning of dangers in the use of pyrophosphates or of difficulties which might arise if fluorides and pyrophosphates are used together.

6.1.5 At best, the Appellant has demonstrated that certain individuals, who without doubt were distinguished in the field of oral care, were of the opinion that a combination of fluoride and pyrophosphate compounds would not be effective in the care of teeth and argued that clinical tests would serve no purpose. In the light of the technical and patent literature discussed above, such cannot be regarded as evidence of a prejudice, that is of an opinion generally held in the art at the priority date of the patent in suit.

6.2 In the absence of such prejudice, it remains to be decided whether or not the subject-matter of Claim 1 of the main request satisfies the requirements of Article 56 EPC in respect of inventive step. The closest prior art, Haefele, relates to toothpastes containing fluoride ions in the required concentration (col. 10, lines 65 to 69). The compositions may also contain pyrophosphates as anticalculus agent. Pyrophosphates are embraced by the general formula set out in col. 3, lines 22 to 24, monosodium pyrophosphate being specifically mentioned. A concentration of 0.1 to 10% by weight of anticalculus agent (see col. 7, lines 2 to 7) would be sufficient to provide the required minimum of pyrophosphate ions (cf. point 6.1.4 above). The preferred cations of these salts are alkali metals, e.g. Na or K (col. 6, lines 25 to 27). The preferred pH of the composition is from 6.0 to 7.5 (col. 7, lines 44 to 45), which is within the range specified by Claim 1 of the patent in suit. Haefele teaches little about the abrasive (col. 7, lines 58 to 60) but the toothpaste set out in Example XXI contain a urea/formaldehyde

condensate as abrasive; such would be excluded by the disclaimer of thermosetting polymerised resins in Claim 1 of the patent in suit. However, the abrasive specifically mentioned and claimed in the patent in suit, i.e. calcium pyrophosphate, has long been employed as a dental abrasive and is in fact used in a tooth powder in Example XVI of Haefele. Its use in a toothpaste is, for example, disclosed in US-A-2 876 167, published in 1959. Since even on the admission of the Appellant (e.g. at the oral proceedings before the Opposition Division) there is nothing inventive in the choice of abrasive, the Board can only conclude that the composition of Claim 1 of the main request can be derived in an obvious manner from those disclosed in document (2).

6.2.1 Nor does the Board see any reason to depart from this view on the basis of the Appellant's argument that Haefele is concerned with a different problem, i.e. inhibiting the stain which occurs on using bis-biguanide antiplaque agents. It is to be noted that such bis-biguanides are optional components of the compositions claimed in the patent in suit (Page 5, lines 1 to 6 of the printed patent specification). In any event, it appears to the Board that deposits of calculus would be even more likely to visibly stain than the smooth surface of the tooth. There would thus be a particular incentive to employ an anticalculus agent, such as the pyrophosphates currently claimed, in order to avoid the staining effect and no reason to disregard Haefele.

6.3 The Appellant's contention that the expression "pyrophosphate ions" relates to the "free ions" dissolved in the aqueous phase of the oral composition has been the subject of further voluminous written submissions and evidence, and two days of discussions in the oral proceedings of the present case and the

copending appeal T 98/94. The Board has been confirmed in its view on the construction of these words already expressed in point 3.2.5 of decision T 28/92 on the parent patent.

6.3.1 Although the expression "pyrophosphate ions" appears in Claim 1 of the granted divisional application and on page 2, lines 54 to 55 of the description thereof, such wording is not to be found in the parent application as originally filed. It is also to be noted that even the divisional application makes no reference to dissolved pyrophosphate ions. Claim 1 of the originally filed application refers merely to salt "...sufficient to provide at least 1.5%  $P_2O_7^{-4}$ ". Similar language is to be found on page 5, lines 16 to 17 and again on page 10, line 8 of the description of the parent. At the time the parent was filed, a distinction was made between "fluoride ions" in component (b) of Claim 1 and the reference to " $P_2O_7^{-4}$ " in component (c).

6.3.2 The Board is not convinced that the determination of "free" pyrophosphate ions which feature in the declarations of Leonard (dated 9 October 1984), Banks (5 November 1990) MacClanhan (1 March 1990) or Huetter (27 April 1994 and 7 April 1995) are of significance in relation to, or have any basis in, the original disclosure. Huetter does give a method for such a determination. The Respondents, however, objected that his was not a standard method in the art (see, e.g. declaration of MacPherson dated 9 June 1995) and referred to other tests recommended by the American Dental Association. If an applicant for a European patent wishes to base the claims of an application on a test which is not a known standard it is incumbent upon him to disclose the method of measurement in the application documents; this the Appellant failed to do.



6.3.3 The Board notes that in accordance with page 5, line 17 of the parent application, the amount of water may be from 2 to 95% by weight of the total composition. As argued by the respondents, if the said composition contained only 2% of water, it would seem impossible for it to contain 1.5% of dissolved pyrophosphate ion. This would also apply if sorbitol were added as solubiliser; the Board is not convinced that the ionised portion would reach 1.5%.

6.3.4 It has been shown convincingly that the free ions actually dissolved in the aqueous phase of the composition will be an equilibrium mixture of  $H_3P_2O_7^-$ ,  $H_2P_2O_7^{-2}$ ,  $HP_2O_7^{-3}$  and  $P_2O_7^{-4}$  ions, the relative ratios depending on the pH (see declaration of van Wazer dated 5 October 1993). So the reference to " $P_2O_7^{-4}$ " cannot be taken literally as a reference to actual dissolved ions.

6.3.5 For use as an oral composition the important concentration will be that experienced in the mouth of the user rather than in the composition as stored. But the wording used for pyrophosphate is different to that used in relation to fluoride ions, where the wording clearly refers to the concentration to be obtained in the mouth of the user, in accordance with methods already well known in the art at the priority date.

6.3.6 For someone making up the oral composition the most convenient measure would be to know what weight of soluble pyrophosphate to add, irrespective of the percentage of free ions present in the solution as marketed. Certainly if the free ion concentration depends not only on the weight of soluble pyrophosphate in the composition, but also on the abrasive, as the Appellants emphasize in their evidence where one witness states that depending on the abrasive and other components not even 10% of soluble pyrophosphate may be

sufficient to provide 1.5% of dissolved free ions, one would expect the description to discuss this problem and indicate how the free ion concentration is to be determined and to be achieved. Yet this is not discussed at all. Voluminous evidence as to what may have been the inventors' intention, and what they later told experts, cannot make up for this lack of guidance in the description.

6.3.7 If, on the other hand, the view of the Respondents is followed that the reference to  $P_2O_7^{-4}$  in the originally filed parent application was intended merely as an index to measure the amount of soluble pyrophosphate (in terms of the anion) irrespective of whether or not it is dissolved in the aqueous phase of the toothpaste, no difficulties arise. Such a view is supported by the declaration of Gambogi (18 May 1994), the reference to Keenan's General College Chemistry, 1980 edition, page 309 and also page 200 of the text-book by Levi and Peyronel attached to the MacPherson declaration referred to above. The Board adopts this view as being the correct meaning.

6.3.8 It is on this basis that the Board has treated the question of inventive step.

6.4 It was submitted that the Appellants were the first to demonstrate by extensive and expensive trials that the combination of fluoride and pyrophosphates was effective and safe, though details about such trials were not put

before the Board, except for trials in Taiwan were the comparison was with non-fluoride toothpaste. But being the first to pay for expensive trials, does not mean that what was tested was an invention.

6.5 The Appellants also submitted evidence showing that the product rapidly established itself on the US market. The Board however can only conclude that this evidence shows that the Appellants showed good commercial judgement in launching the product with a major campaign emphasising the feature of tartar control, not that the product was inventive.

7. *Inventive step of the auxiliary requests*

7.1 The first auxiliary request limits the pyrophosphate to mixtures of dialkali metal and tetralkali metal salts. It has been made clear throughout the proceedings that the pyrophosphate anion is the important species in the claimed composition and that once in solution it does not matter whether the said anion is derived from a mono-, di- or tetra- alkali metal salt or mixture thereof. Accordingly, there can be nothing inventive in the choice of such salts.

7.2 The second auxiliary request specifies a mixture of disodium and tetrasodium pyrophosphate or a mixture of disodium, tetrasodium and tetrapotassium pyrophosphates. Such are amongst the most common cations (e.g. Haefele, col. 6, lines 24 to 27). Sodium and potassium salts of pyrophosphoric acid are mentioned in GB-A-490 384 for their "tartar dissolving action". There can be no inventive step involved in their choice. A corresponding argument applies to the mixtures claimed in the third auxiliary request, especially as no particular beneficial effect has been demonstrated for such a combination.

- 7.3 The compositions of the fourth and fifth auxiliary requests disclaim a content of bis-biguanide, thus distinguishing from Haefele. Omission of the bis-biguanide cannot contribute to inventive step, especially since the separate and sequential use of bis-biguanide and anticalculus agent is actually contemplated by Haefele (col. 1, lines 45 to 48).
- 7.3.1 These auxiliary requests also lack inventive step when considered in relation to DE-A-2 811 097 (Huber) see point 6.2.4 above). As already set out in detail in decision T 28/92, Huber discloses compositions which destroyed the novelty of the parent patent. The compositions of Huber contain fluorides and pyrophosphate within the ranges required by Claim 1 and disclose the appropriate pH range. They differ in that the abrasive is a particular form of silica, which is excluded by the disclaimer of Claim 1. There can be no inventive step in substituting other abrasives well known in the art.
- 7.4 With respect to the sixth auxiliary request, the Board can see nothing in the patent in suit which indicates any special techniques relating to the mixing of components (a) to (d). In the circumstances, having decided that the resultant composition fails to satisfy the requirements of Article 56 EPC, there can be nothing inventive in merely mixing the respective components in conventional manner in order to obtain it (cf T 28/92, points 4.1 to 4.3).
- 7.5 Huber referred to in 7.3.1 above also relates to the use of pyrophosphate salt mixtures as anticalculus agents together with fluorides and a dental abrasive at a pH within the range specified in the seventh auxiliary request. The description of Huber at col. 12, lines 17 to 22 mentions the optional presence of bis-biguanide

antiplaque agents. However, most examples do not contain bis-biguanides. Thus, the use disclosed by Huber differs in that the abrasive is one that is excluded by the disclaimer of the patent in suit. However, the Board can see no inventive step in substituting another well known dental abrasive.

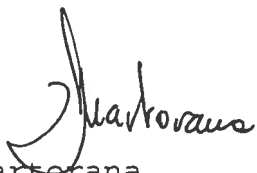
- 7.6 Since the subject-matter of the auxiliary requests as well as that of the main request lack inventive step, the appeal must be dismissed.
8. The Board would likewise have reached a conclusion of lack of inventive step in respect of the main request had it been decided to choose Huber as a starting point. Huber discloses a composition containing components (b), (c) and (d) and the pH range of Claim 1 of the main request together with a dental abrasive which as claimed in the parent patent 0 097 476 was found to lack novelty in decision T 28/92 but is excluded from the claims of this divisional. Starting from Huber, the problem can also be seen in developing alternative dental compositions. Whilst Huber relates to the use of a specific dental abrasive excluded by Claim 1 of the patent in suit, its teachings relating to the other components would still suggest to the skilled person looking for alternatives, that substituting dental abrasives which were well known at the priority date and falling within present Claim 1 would produce something workable .

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:



P. Marterana

The Chairman:



P. A. M. Lançon

