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EUROPEAN QUALIFYING EXAMINATION 2017

Pre-examination

This paper comprises:

*	Instructions for answering the paper and marking scheme	2017/P/EN/1
*	Legal questions (Questions 1-10)	2017/P/EN/2-11
*	Claim analysis (Questions 11-20)	2017/P/EN/12-34
*	Annexes: calendars for 2016 and 2017 with indication of days on which at least one of the EPO filing offices is not open for the receipt of documents	2017/P/EN/35-36

Instructions for answering the paper and marking scheme

1. The pre-examination is in the form of a multiple choice paper. It comprises 20 questions in all, 10 questions relating to legal knowledge (questions 1-10) and 10 questions relating to the analysis of claims (questions 11-20). Questions must be answered by filling in the circles on the answer sheet printed on the reverse side of your personal cover sheet. The duration of this examination is four hours.

(a) Each question X has 4 separate statements, namely X.1, X.2, X.3 and X.4. For each statement X.1, X.2, X.3 and X.4 candidates must unambiguously indicate on the answer sheet whether the statement is true or false. For each statement X.1, X.2, X.3 and X.4 only one answer can be given, either true or false. Each statement within a question is to be considered independently of the other statements.

(b) To indicate that a statement X.1, X.2, X.3 or X.4 is true, the corresponding circle for “true” should be filled using a black medium soft HB pencil. To indicate that a statement X.1, X.2, X.3 or X.4 is false, the corresponding circle for “false” should be filled using a black medium soft HB pencil.

(c) If, in reply to a statement X.1, X.2, X.3 or X.4, no indication is given as to whether the statement is true or false, or if both true **and** false are indicated, then the answer to this statement will be deemed not to be correct. Accordingly, if candidate fill or partly fill a circle they do not intend to submit as part of their answer, it is essential that any mark in that circle is fully erased.

(d) There is no possibility for submitting notes or remarks to the examiner. Any such submission will be disregarded.

2. Only one answer sheet per candidate will be available.

3. Marking

(a) Marks awarded per question
If within one question X, none or only one of the answers to the statements X.1, X.2, X.3 and X.4 is correct, then 0 marks will be awarded for this question X.
If within one question X, two of the answers to the statements X.1, X.2, X.3 and X.4 are correct, then 1 mark will be awarded for this question X.
If within one question X, three of the answers to the statements X.1, X.2, X.3 and X.4 are correct, then 3 marks will be awarded for this question X.
If within one question X, all four of the answers to the statements X.1, X.2, X.3 and X.4 are correct, then 5 marks will be awarded for this question X.

(b) Total number of marks awarded
The total number of marks awarded for the pre-examination is the sum of the marks achieved for each question, calculated as stated above.

Legal questions

Question 1

Giorgio validly filed an Italian patent application IT-G as a first filing. IT-G discloses a frame made of metal, preferably aluminium, for device X. IT-G was filed in April 2016 and withdrawn in May 2016. In September 2016, a frame made of steel for device X was made available to the public in a catalogue. Today, 6 March 2017, Giorgio files a European patent application EP-G claiming priority from IT-G. Claim 1 of EP-G is directed to a frame made of metal for device X. Claim 2 of EP-G is directed to a frame made of steel for device X. Claim 3 of EP-G is directed to a frame made of aluminium for device X. Claim 4 of EP-G is directed to a frame made of copper for device X.

For each of the statements 1.1 – 1.4, indicate on the answer sheet whether the statement is true or false:

1.1 The catalogue is state of the art under Article 54(2) EPC for claim 1 of EP-G.
1.2 The catalogue is state of the art under Article 54(2) EPC for claim 2 of EP-G.
1.3 The catalogue is state of the art under Article 54(2) EPC for claim 3 of EP-G.
1.4 The catalogue is state of the art under Article 54(2) EPC for claim 4 of EP-G.

Legal questions

Question 2

Jill filed the international application PCT-J on 4 August 2014 without claiming a priority. PCT-J was published with the international search report in February 2016. The international searching authority was the Nordic Patent Institute. Today, 6 March 2017, Jill decides to enter the European phase before the EPO.

For each of the statements 2.1 – 2.4, indicate on the answer sheet whether the statement is true or false:

2.1 One requirement for validly entering the European phase with PCT-J is that a renewal fee must be paid.

2.2 One requirement for validly entering the European phase with PCT-J is that the designation fee must be paid.

2.3 For entry into the European phase with PCT-J today, at least one fee for further processing must be paid.

2.4 For PCT-J the EPO shall carry out a supplementary European search.

Question 3

For each of the statements 3.1 – 3.4, indicate on the answer sheet whether the statement is true or false:

The following European patent application is pending today, 6 March 2017:

3.1 A European patent application EP1, for which a reply to a communication under Rule 71(3) EPC was to be filed at the latest on 2 March 2017, and for which the applicant did not file a reply.

3.2 A European patent application EP2, for which the renewal fee due on 30 June 2016 has not yet been paid and for which the EPO sent a notice of loss of rights dated 2 February 2017.

3.3 A European patent application EP3, which was refused by a written decision dated 28 December 2016.

3.4 A European patent application EP4, for which the decision to grant the European patent is dated 6 March 2017.

Question 4

Today, 6 March 2017, Adrienn filed with the EPO a European patent application EP-A. Adrienn is resident in Hungary. The application documents of EP-A consist of a description in Hungarian and of two drawings.

For each of the statements 4.1 – 4.4, indicate on the answer sheet whether the statement is true or false:

4.1 Adrienn is entitled to a reduction of the filing fee.

4.2 According to the provisions of the EPC, Adrienn must file one or more claims within two months of filing of EP-A.

4.3 According to the provisions of the EPC, Adrienn must file the translation of the description within two months of filing of EP-A.

4.4 According to the provisions of the EPC, Adrienn must pay the filing fee within two months of filing of EP-A.

Legal questions

Question 5

A notice of appeal was validly filed on 3 February 2017 against the decision to refuse the European patent application EP-B. The decision is dated 5 December 2016. According to the decision, claim 1 of the sole request is not novel over D1 and is not inventive over D2 in combination with the common general knowledge of the skilled person. The statement setting out the grounds of appeal has not yet been filed.

For each of the statements 5.1 – 5.4, indicate on the answer sheet whether the statement is true or false:

5.1 The statement setting out the grounds for the appeal must be filed at the latest on 5 April 2017.

5.2 The appeal fee is reimbursed, if the applicant withdraws the appeal today, 6 March 2017.

5.3 According to the provisions of the EPC, if the appeal is not allowed within four months of receipt of the statement of grounds, it shall be remitted to the Board of Appeal.

5.4 The examining division will grant interlocutory revision, if the applicant can convince the examining division that claim 1 of the sole request is novel over D1.

Question 6

The mention of the grant of European patent EP-V was published on 18 May 2016. A notice of opposition against EP-V was filed on 20 February 2017 with the EPO. Today is 6 March 2017.

For each of the statements 6.1 – 6.4, indicate on the answer sheet whether the statement is true or false:

6.1 The notice of opposition was filed within the opposition period.

6.2 If the opposition fee has not been paid so far, then the opposition will not be deemed to have been filed.

6.3 If the opposition is not admissible because the facts and evidence filed in the notice of opposition do not support the grounds for opposition, a valid option for the opponent is to file additional, more relevant documents later in the proceedings.

6.4 If the notice of opposition does not mention the name of the patent proprietor, the opponent will have the opportunity to remedy this deficiency.

Legal questions

Question 7

A European patent EP-M was granted with only one claim. The claim reads:

"*A steel composition M.*"

An admissible opposition was filed against EP-M and the ground for opposition is lack of novelty. The notice of opposition was communicated to the patent proprietor who in reply filed an amended claim as the main request. The amended claim reads:

"*A very thin layer of steel composition M.*"

The amendment is based on the description of EP-M as originally filed.

For each of the statements 7.1 – 7.4, indicate on the answer sheet whether the statement is true or false:

7.1 The amended claim is admissible under Rule 80 EPC only if the amended claim is novel over the cited prior art.

7.2 The opponent cannot validly object to clarity of the amended claim, since lack of clarity is not a ground for opposition.

7.3 The patent proprietor is entitled to file amendments in reply to the communication informing him of the notice of opposition.

7.4 The current request of the patent proprietor is to reject the opposition.

Legal questions

Question 8

The examining division issued a communication under Article 94(3) EPC for European patent application EP-R. The communication is dated 7 September 2016. The period set in this communication is four months. On 31 December 2016, the representative for EP-R fell in a state of legal incapacity and the EPO was informed of it on 10 January 2017. On 12 January 2017, the legal division of the EPO decided to interrupt the proceedings regarding EP-R. Today, 6 March 2017, the EPO is informed of the appointment of a new representative for EP-R.

For each of the statements 8.1 – 8.4, indicate on the answer sheet whether the statement is true or false:

8.1 The communication is deemed to be delivered on 19 September 2016, since 17 September 2016 is on a Saturday.

8.2 The proceedings are interrupted with effect of 12 January 2017.

8.3 After resumption of the proceedings for EP-R, the communication dated 7 September 2016 will be considered null and void and will be notified anew to the new representative.

8.4 For interruption of the proceedings, no administrative fee has to be paid.

Question 9

Today, 6 March 2017, an applicant wishes to file a new European patent application to protect an invention relating to the treatment of disease X using a substance Z. A pre-published scientific article discloses the use of substance Z for treating the disease Y. Disease Y and disease X are diseases of the human body. Disease Y is completely unrelated to disease X.

For each of the statements 9.1 – 9.4, indicate on the answer sheet whether the statement is true or false:

The following claim complies with the requirements of the EPC:

9.1 Use of substance Z for the manufacture of a medicament for treating disease X.
9.2 Substance Z for use in the treatment of disease X.
9.3 Method for treating disease X using substance Z.
9.4 Substance Z for use as a medicament.

Legal questions

Question 10

The international application PCT-A was validly filed on 4 January 2017 with the EPO. PCT-A validly claims the priority from a Dutch patent application NL-A, filed on 31 January 2016. Today, 6 March 2017, the international search report for PCT-A was transmitted to the applicant.

For each of the statements 10.1 – 10.4, indicate on the answer sheet whether the statement is true or false:

10.1 An international preliminary examination of PCT-A before the EPO can be validly requested on 30 November 2017.

10.2 A handling fee is due for requesting the international preliminary examination of PCT-A before the EPO.

10.3 The applicant is entitled to communicate orally with the EPO as the International Preliminary Examination Authority.

10.4 If amended claims for PCT-A are received by the International Bureau before the technical preparations for international publication have been completed, then the international publication of PCT-A will also contain the text of the amended claims.

Claim analysis

Description of the Client's Patent Application (Filed on 1 March 2014)

[001] The present invention relates to toothbrushes for human use. Toothbrushes are used in combination with toothpaste by women, men and children for removing dental plaque from teeth.

[002] Toothbrushes comprise bristles which are joined to a brush body. In known toothbrushes, the brush body comprises a brush head which holds the bristles, a handle held by the user during brushing of his teeth, and a neck between the handle and the bristles. In such known toothbrushes, the bristles are provided as a plurality of bristle bundles. The separate provision of the bristle bundles allows the bristles to be manufactured from a different material than the brush body. The bristle bundles are either joined to the brush head during the production of the brush body, or are joined to the brush head in a separate step after the brush body has been produced.

[003] A drawback with these known toothbrushes is that the users need to be trained by dentists in order to achieve optimum dental plaque removal. If the users have not been trained properly, they are likely to achieve less than optimum results. The remaining dental plaque can give rise to dental caries, which is highly undesirable.

[004] It is an object of the present invention to provide toothbrushes which overcome this drawback. This object is achieved by the subject-matter of the attached claims. In particular, the present invention is based on the surprising finding that the amount of dental plaque removal can be increased by transmitting additional vibrations to the bristles. These vibrations are generated by an electric vibrator inside the brush body. Preferably, the electrically operated vibrator is located in the handle together with a controller and a battery. In the present invention, the controller acts as a switching means for selectively supplying electric energy from the battery to an electrically operated element, because the controller connects and disconnects the vibrator from the battery.

Claim analysis

[005] Brief description of the drawings:
FIG. 1 shows the cross-section of a toothbrush 100 according to a first embodiment of the invention.
FIG. 2 shows the cross-section of a toothbrush 200 according to a second embodiment of the invention.
FIG. 3 shows the cross-section of a toothbrush 300 according to a third embodiment of the invention.
FIG. 4 shows the cross-section of a toothbrush 400 according to a fourth embodiment of the invention.

[006] The toothbrush 100 according to the first embodiment of FIG. 1 comprises a unitary brush body in which the brush head is fixedly connected to the handle. The unitary brush body comprises a bristle zone 110, a handle 130 and a neck 111 therebetween. A plurality of bristle bundles 120 are held in the bristle zone 110. The handle 130 comprises a push button 132, a controller 133, a vibrator 134 and a battery 135. The controller 133 is connected with each of the push button 132, the vibrator 134 and the battery 135 by means of electric cables. As long as the controller 133 determines that the user's finger is pressing down the push button 132, electric energy is supplied from the battery 135 to the vibrator 134, and vibrations are generated and transmitted to the bristles.

[007] The vibrators of the invention are very energy efficient, and the batteries in the inventive toothbrushes will last much longer than the bristles. As a toothbrush with worn-out bristles can hurt its user, the second embodiment of the invention allows the user to replace a worn-out brush head. The toothbrush 200 of FIG. 2 therefore comprises a body formed of a handle 230 and of a replaceable brush head with a bristle zone 210, bristle bundles 220 and a neck 211. The replaceable brush head comprises a connection hole 212 at the end of its neck 211. The connection hole 212 engages with a connection protrusion 231 on the handle 230, and thereby forms a connection section. The connection hole 212 and the connection protrusion 231 do not hinder the transmission of vibrations to the bristles. Once the bristle bundles 220 are worn out, the brush head can be pulled off the handle 230, and be replaced with a fresh brush head. Apart from the connection protrusion 231, the handle 230 also comprises a push button 232, a controller 233, a vibrator 234 and a battery 235. These elements function exactly like the corresponding elements in the first embodiment.

[008] Some users do not like pressing a push button while they brush their teeth. The third embodiment of the invention according to FIG. 3 therefore provides an alternative to a push button in the handle. The toothbrush 300 automatically detects that the users are brushing their teeth by means of a pressure sensor 313. The pressure sensor 313 is located in the bristle zone 310, for example below the bristle bundles 320. The pressure sensor 313 only generates an electric signal, when the user is pressing the bristles against his teeth. That signal is transmitted to the controller 333, for example by means of an electric cable embedded in the neck 311. As long as the controller 333 receives that signal, electric energy is supplied from the battery 335 to the vibrator 334. The brush head also comprises a connection hole 312 for receiving the connection protrusion 331 of the handle 330. Thereby, the vibrations can be transmitted to the bristles, and electric cables pass through the protrusion 331 and the hole 312 for establishing the electric connection between the pressure sensor 313 and the controller 333. Apart from the controller 333, the handle 330 also comprises the vibrator 334 and the battery 335. These elements function exactly like the corresponding elements in the other embodiments. Like in the second embodiment, a worn out brush head can be replaced by pulling it off the handle 330.

Claim analysis

[009] According to market research, users think that a toothbrush has a higher cleaning efficiency if it looks technical. As the vibrator in the above toothbrushes is not visible, the technical character of these toothbrushes should be emphasised by including additional elements with a technical appearance such as a light-emitting diode (LED). In a fourth embodiment according to FIG. 4, the toothbrush 400 comprises a unitary brush body with a bristle zone 410, bristle bundles 420, a handle 430 and a neck 411 therebetween. In this embodiment, the handle 430 contains a LED 436, which is connected to a controller 433 by means of an electric cable. As long as the controller 433 determines that the user's finger is pressing down the push button 432, electric energy is supplied from the battery 435 to both the vibrator 434 and the LED 436. When users brush their teeth, the LED emits for example blue light while vibrations are generated by the vibrator 434 and transmitted to the bristles. Apart from the LED 436 and the controller 433, the handle 430 also comprises the vibrator 434 and the battery 435. The LED can also be incorporated into the first, the second or the third embodiments of the invention. The toothbrush 400 according to the fourth embodiment can also have a replaceable brush head and a connection section, similar to that of the toothbrushes according to the second and third embodiments.

[010] The toothbrushes 100, 200, 300 and 400 according to the above embodiments must have a total length of less than 30 cm, and the toothbrushes with a replaceable brush head must have a total length of between 18 and 25 cm for ergonomic reasons.

Drawings of the client's application:

FIG. 1

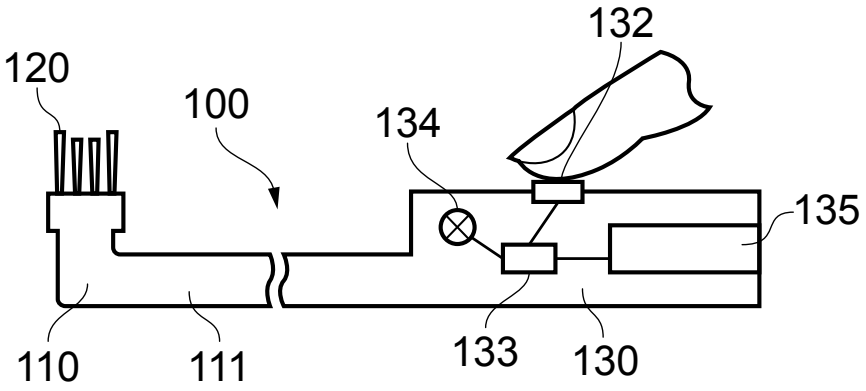


FIG. 2

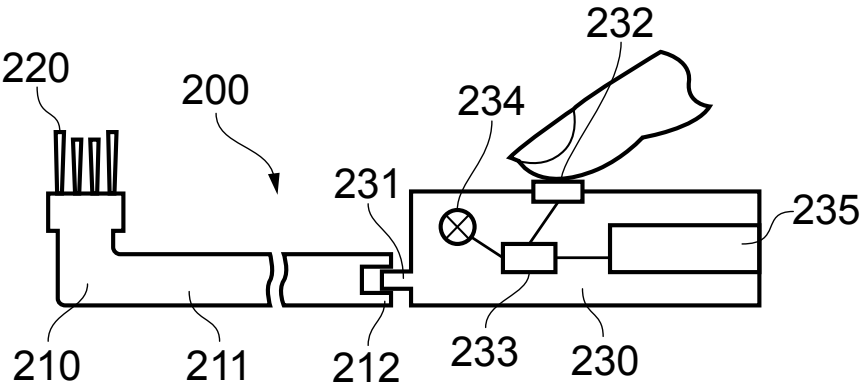


FIG. 3

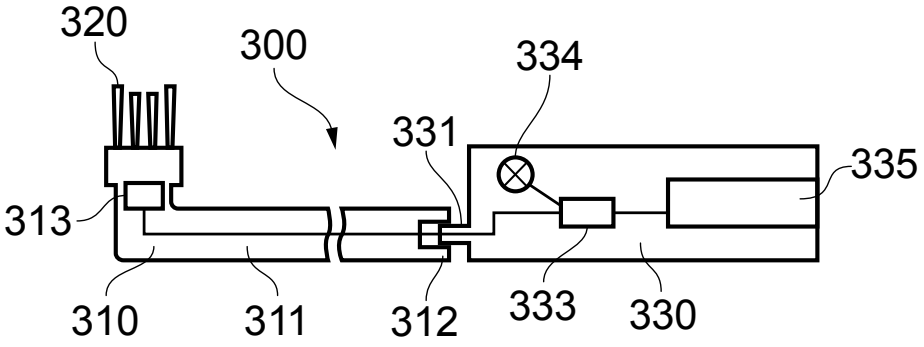
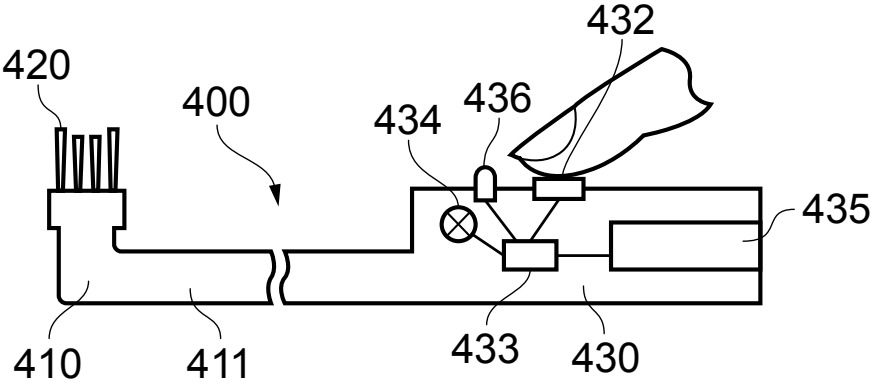


FIG. 4



Claim analysis

Question 11

For questions 11 to 13, assume that claim I is a single independent claim, and that claim I.2 is a dependent claim, the claims being filed with the client's patent application.

I. Body for a toothbrush providing increased dental plaque removal, the body having a brush head with a bristle zone for holding bristle bundles, a handle and a neck between the bristle zone and the handle, wherein the neck is connected to the handle, and wherein the body comprises a battery, an electrically operated element and a switching means for selectively supplying electric energy from the battery to the electrically operated element.

I.2 Body for a toothbrush according to claim I, wherein the toothbrush has a total length of between 18 and 25 cm.

For each of the statements 11.1 - 11.4 indicate on the answer sheet whether the statement is true or false:

11.1 The toothbrush of the first embodiment of the application is covered by the scope of claim I.

11.2 The toothbrush of the second embodiment of the application is covered by the scope of claim I.

11.3 The toothbrush of the third embodiment of the application is covered by the scope of claim I.

11.4 The toothbrush of the fourth embodiment of the application is covered by the scope of claim I.

Claim analysis

You have found the following two documents D1 and D2 during a prior art search on the internet:

Document D1 (published November 2013)

[001] While cleaning their teeth, adults, in particular, often press their toothbrushes too hard while cleaning their teeth. This excessive force can seriously irritate the gums of these users. It is an object of the present invention to make a user aware of such excessive force.

[002] The toothbrush of FIG. 1 comprises a bristle zone 11 with bristles 12, which is connected to a handle 13. The handle 13 comprises a controller 14, a battery 15, a green light-emitting diode (LED) 16 and a red LED 17. The brush head also contains a pressure sensor 18 in the bristle zone 11, right below the bristles. The controller 14 is connected with the battery 15, each of the LEDs 16 and 17, and the pressure sensor 18 by means of electric cables. A pressure limit value, which has been obtained by clinical research, is stored in the controller 14.

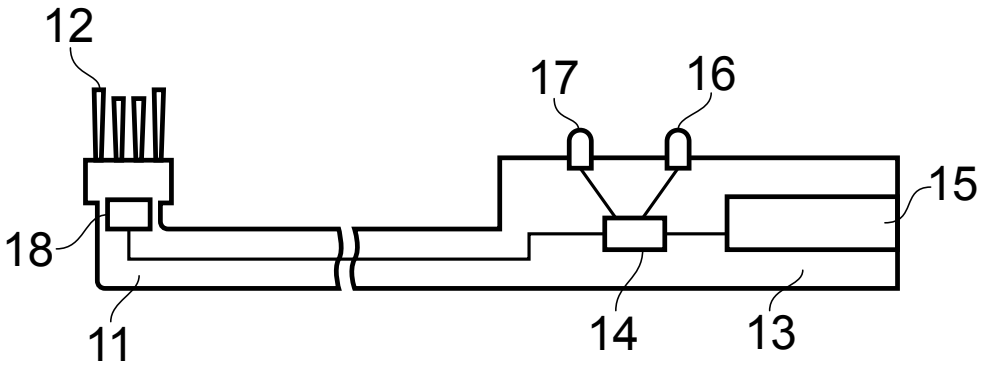
[003] The pressure sensor 18 generates an electric signal as long as the user presses the bristles against the teeth. That signal is transmitted to the controller 14, converted into a measured pressure and compared to the pressure limit value. As long as the measured pressure is below the pressure limit value, the controller 14 supplies electric energy to the green LED 16. The user is thereby informed that the brush does not harm the user's gums. However, if the measured pressure exceeds the pressure limit value, the controller 14 switches the energy supply to the red LED 17. The user is thereby alerted that the brush is pressed too hard.

[004] The toothbrush according to FIG. 1 has a total length of 24 cm.

Drawing of D1

D1

FIG. 1



Claim analysis

Document D2 (published October 2013)

[001] Dentists recommend a minimum duration of two minutes for brushing teeth. Otherwise, too much dental plaque remains on the teeth and dental caries is likely to develop. In particular children tend not to brush their teeth long enough. Therefore, an improved toothbrush for children is needed. According to the following description the bodies of toothbrushes for children are generally made from thermoplastic materials such as polyethylene, polypropylene, polyacrylics or polyamide. The bristles of these toothbrushes are made from polyethylene, polypropylene or polyamide.

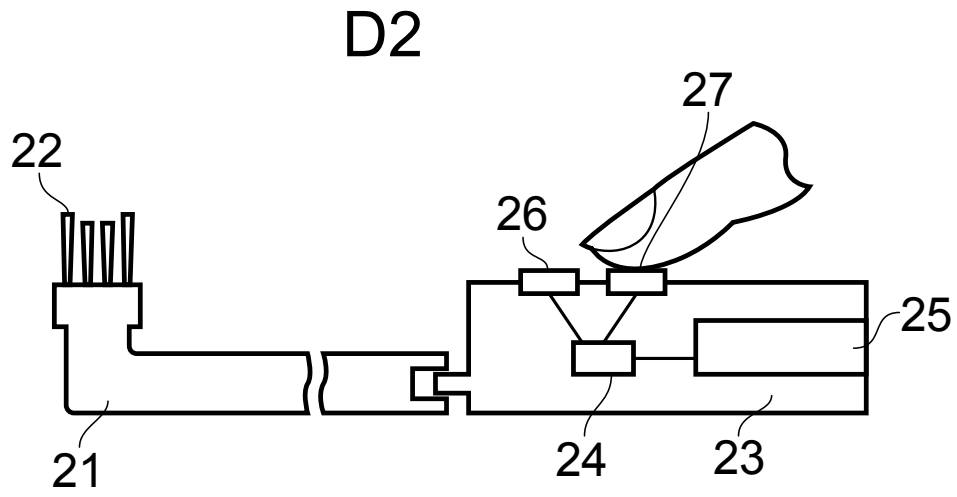
[002] The toothbrush of FIG. 1 comprises a replaceable brush head with a bristle zone 21 and bristles 22, a handle 23 with a controller 24 and a battery 25. The handle also includes a music module 26 with a loudspeaker, and a sensor 27. The controller 24 is connected with the battery 25, the music module 26 and the sensor 27 by means of electric cables.

[003] As long as a child holds the toothbrush in his hand, the sensor 27 is in contact with his skin and thereby generates an electric signal. That signal is transmitted to the controller 24, which then supplies electric energy to the music module 26 as long as the controller 24 receives that signal. As long as electric energy is supplied to the music module, it plays a melody over its loudspeaker, the vibrations of which are converted into vibrations of the air. The maximum duration of the melody is two minutes. Children want to listen to the entire melody, and therefore will be motivated to brush their teeth long enough.

[004] The replaceable brush head comprises a connection hole, which cooperates with a connection protrusion on the handle. Once the bristles 22 are worn out, the brush head can be pulled off the handle 23, and be replaced with a fresh brush head. A toothbrush for children, such as the toothbrush according to FIG. 1, must have a total length of 13, 14, 15 or 16 cm in order to allow small children to hold the brush.

Drawing of D2

FIG. 1



Claim analysis

Question 12

For each of the statements 12.1 - 12.4 indicate on the answer sheet whether the statement is true or false:

12.1 D1 discloses a switching means for selectively supplying electric energy from a battery to an electrically operated element.
12.2 The subject-matter of claim I is novel with respect to D1.
12.3 D2 neither explicitly nor implicitly discloses increased dental plaque removal.
12.4 The subject-matter of claim I is novel with respect to D2.

Question 13

For each of the statements 13.1 - 13.4 indicate on the answer sheet whether the statement is true or false:

13.1 Dependent claim I.2 covers a toothbrush according to claim I having a length of 24 cm.
13.2 The additional feature "a total length of between 18 and 25 cm" in dependent claim I.2 is novel over D1.
13.3 Document D2 discloses a toothbrush for children having a length of 15 cm, a body made from polypropylene and bristles made from polypropylene.
13.4 Claim I also covers toothbrushes in which the bristle bundles are joined to the brush head in a separate step after the body has been produced.

Claim analysis

Question 14

For questions 14 to 17, assume that claim II is a single independent claim and claims II.2 to II.5 are dependent claims, the claims being filed with the client's patent application.

II. Brush with a body, wherein the body comprises a brush head with a bristle zone, bristle bundles held by the bristle zone, a handle and a neck between the bristle zone and the handle, wherein the neck is connected to the handle, and wherein the body comprises a battery and an electrically operated element, characterised in that the electrically operated element is an electrically operated vibrator.

II.2 Brush according to claim II, wherein the neck is connected to the handle by means of a connection section.

II.3 Brush according to claim II, wherein the body comprises a switching means, for example a push button, for selectively supplying electric energy from the battery to the electrically operated element.

II.4 Brush according to claim II, wherein the body comprises a push button and a controller, for selectively supplying electric energy from the battery to the electrically operated element.

II.5 Brush according to claim II, wherein the brush is designed for human use.

Claim analysis

For each of the statements 14.1 - 14.4 indicate on the answer sheet whether the statement is true or false:

14.1 The toothbrush of the first embodiment of the application is covered by the scope of claim II.

14.2 The toothbrush of the second embodiment of the application is covered by the scope of claim II.2.

14.3 The toothbrush of the third embodiment of the application is covered by the scope of claim II.3.

14.4 The toothbrush of the third embodiment of the application is covered by the scope of claim II.4.

Question 15

For each of the statements 15.1 - 15.4 indicate on the answer sheet whether the statement is true or false:

15.1 Claim II.3 excludes that the brush contains a pressure sensor.

15.2 Claim II.4 excludes that the brush contains an electrically operated vibrator.

15.3 Claim II.4 is limited to a brush with a vibrator in the handle.

15.4 Claim II.2 excludes that electric cables are present in the brush head.

Claim analysis

The European Search Report established by the European Patent Office cites documents D3 and D4.

Document D3 (published November 2013)

[001] The present invention relates to toothbrushes for human adults. Toothbrushes are used in combination with toothpaste for removing dental plaque from teeth.

[002] It is an object of the present invention to provide toothbrushes which prevent that dental plaque remains on the teeth. The present invention is based on the surprising finding that the amount of dental plaque removal can be increased by transmitting additional vibrations to the bristles of the toothbrush. These vibrations are generated by an electric vibrator in the toothbrush. The location of the vibrator directly below the bristles is required for optimum transmission of the vibrations to the bristles.

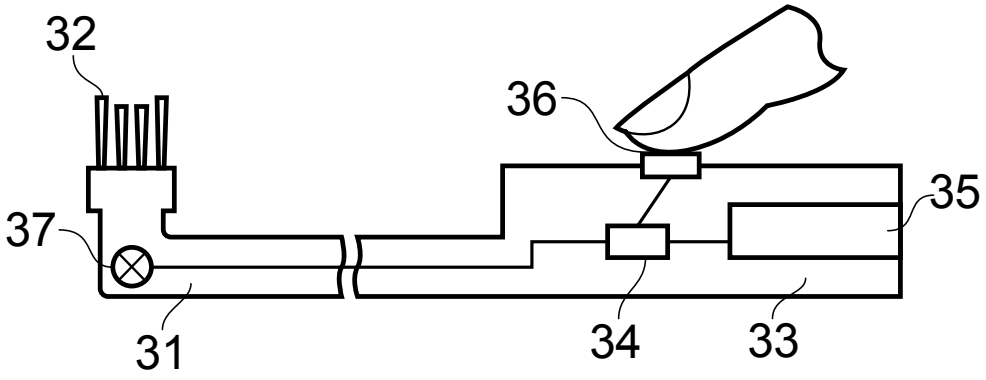
[003] The toothbrush of FIG. 1 comprises a brush head with a bristle zone 31 and bristles 32, and a handle 33 with a controller 34, a battery 35 and a push button 36. An electric vibrator 37 is located in the bristle zone 31, right below the bristles. The controller 34 is connected with the battery 35, the push button 36 and the vibrator 37 by means of electric cables. Electric energy is supplied through an electric cable to the vibrator 37, as long as the controller 34 determines that the user's finger is pressing down the push button 36, and vibrations are generated and transmitted to the bristles. Thereby, the amount of dental plaque removal can be increased.

[004] The toothbrush according to FIG. 1 has a total length of 24 cm.

Drawing of D3

D3

FIG. 1



Claim analysis

Document D4 (published November 2013)

[001] The teeth of dangerous zoo animals such as tigers and lions need to be cleaned on a regular basis by zoo keepers. Before dental cleaning can take place, these animals are mildly sedated in order to calm them down. It has been surprisingly discovered that vibrating toothbrushes keep zoo animals calm during dental cleaning. Thereby, the zoo keeper's risk of being hurt during dental cleaning of dangerous zoo animals is significantly reduced.

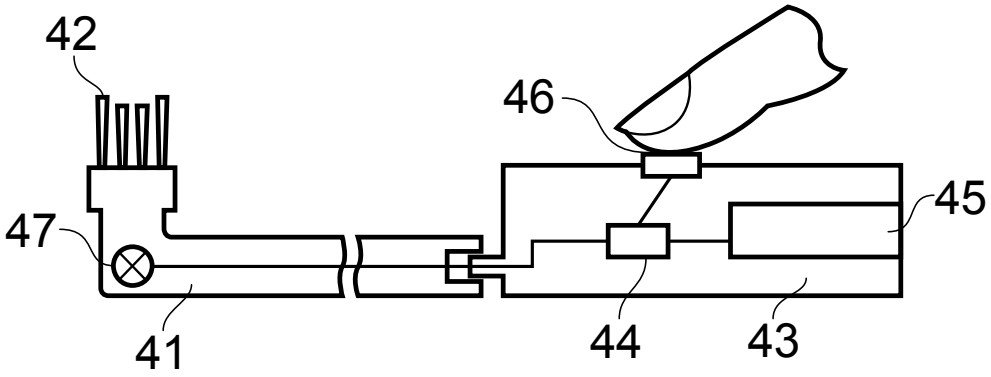
[002] In a first embodiment shown in FIG. 1, the toothbrush comprises a handle 43 and a separate brush head with a bristle zone 41, bristles 42 and a neck. The brush head is connected to the handle 43 by means of a connection hole at the end of the brush head, which fits onto a connection protrusion on the handle 43. The brush head thereby becomes replaceable. Apart from the connection protrusion, the handle 43 comprises a controller 44, a battery 45 and a push button 46. The push button 46 allows the controller 44 to act as switching means for turning on/off a vibrator 47. The vibrator 47 is located inside the brush head, below the bristles 42. Respective electric cables pass through the connection protrusion and the connection hole for establishing the electric connection between the vibrator 47 and the controller 44. As long as the controller 44 determines that the zoo keeper's finger is pressing down the push button 46, electric energy is supplied to the vibrator 47, and vibrations are generated and transmitted to the bristles. Thereby, the animal is calmed down, and safe dental cleaning becomes possible.

[003] The minimum total length of the toothbrush is 40 cm in order to establish a safe distance between the animal and the zoo keeper. In order to further reduce the risk for the zoo keeper, brush heads with a much longer neck should be connected to the handle such that the animal keeper is placed further away from the dangerous animal during dental cleaning.

[004] Although this brush design is described for dental cleaning of animals, the minimum total length of 40 cm has the additional advantage that such a long brush can also be used for other purposes. In a second embodiment, the vibrator 47 is located in the handle of the brush, where the vibrations generated by the vibrator 47 are perceived as pleasant when the brush is used for scratching a human's back while taking a shower.

D4

FIG. 1



Claim analysis

Question 16

For each of the statements 16.1 - 16.4 indicate on the answer sheet whether the statement is true or false:

16.1 Document D4 is useless for attacking novelty of claim II, because it relates to dental cleaning of zoo animals.

16.2 The additional feature "wherein the brush is designed for human use" in claim II.5 distinguishes the claim from document D4.

16.3 The introduction of the disclaimer "wherein the brush is not for use on dangerous zoo animals such as tigers and lions" into claim II during substantive examination is allowable under Article 123(2) EPC.

16.4 The subject-matter of claim II.2 is novel with respect to D4.

Claim analysis

Question 17

For each of the statements 17.1 - 17.4 indicate on the answer sheet whether the statement is true or false:

17.1 The introduction of the feature "wherein the body comprises a push button for selectively supplying electric energy from the battery to the electrically operated element" into claim II during substantive examination is allowable under Article 123(2) EPC.

17.2 The introduction of the feature "wherein the body comprises a push button in the handle and a pressure sensor in the bristle zone" into claim II during substantive examination is allowable under Article 123(2) EPC.

17.3 The introduction of the feature "wherein the brush is a toothbrush for human use" into claim II during substantive examination is allowable under Article 123(2) EPC.

17.4 The introduction of the feature "wherein the electrically operated vibrator is located in the handle" into claim II during substantive examination constitutes an intermediate generalisation.

Claim analysis

Question 18

For questions 18 to 20, assume that claim III is a single independent claim filed with the client's patent application.

III. Toothbrush with a body, wherein the body comprises a brush head with a bristle zone, bristle bundles held by the bristle zone, a handle and a neck between the bristle zone and the handle, wherein the neck is connected to the handle by means of a connection section, and wherein the body comprises a battery and an electrically operated element, and wherein the battery is located in the handle, characterised in that

- the electrically operated element is an electrically operated vibrator located in the handle;
- the connection section comprises a connection hole and a connection protrusion; and
- the toothbrush has a total length of between 18 and 25 cm.

Claim analysis

For each of the statements 18.1 - 18.4 indicate on the answer sheet whether the statement is true or false:

18.1 According to the client's patent application, a technical effect resulting from the feature "the connection section comprises a connection hole and a connection protrusion" of claim III may be identified as replacement of the brush head.

18.2 With respect to D2 as potentially closest prior art and applying the problem-and-solution approach, the objective technical problem underlying the feature "the electrically operated element is an electrically operated vibrator located in the handle" of claim III may be formulated as providing the possibility for easy replacement of the brush head.

18.3 According to the client's patent application, a technical effect resulting from the feature "electrically operated vibrator" of claim III may be identified as transmitting additional vibrations to the bristles.

18.4 The technical feature "the electrically operated element is an electrically operated vibrator located in the handle" distinguishes claim III from document D2.

Claim analysis

Question 19

For each of the statements 19.1 - 19.4 indicate on the answer sheet whether the statement is true or false:

19.1 With respect to D3 as potentially closest prior art, the two-part form of claim III is correctly formulated.

19.2 With respect to D3 as potentially closest prior art, the skilled person would consider a combination with D2 for providing a connection section comprising a connection hole and a connection protrusion between the neck and the handle of the toothbrush.

19.3 D2 prompts the skilled person to locate the vibrator of D3 in the handle.

19.4 A valid argument as to why the skilled person would combine D2 and D3 is that both documents relate to children's toothbrushes.

Question 20

For each of the statements 20.1 - 20.4 indicate on the answer sheet whether the statement is true or false:

20.1 The two-part form of claim III is correctly formulated with respect to D4.

20.2 Document D4 suggests to brush one’s teeth using a brush with an electrically operated vibrator in the handle.

20.3 Document D4 is the closest prior art for the subject-matter of claim III.

20.4 A combination of the first embodiment and the second embodiment of D4 renders the subject-matter of claim III obvious.

Annex 1

2016

JANUARY

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FEBRUARY

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SEPTEMBER

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NOVEMBER

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DECEMBER

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Tage / Days / Jours		München Munich	Den Haag The Hague La Haye	Berlin
Neujahr - New Year's Day - Nouvel An	01.01.2016	x	x	x
Heilige Drei Könige - Epiphany - Epiphanie	06.01.2016	x		
Karfreitag - Good Friday - Vendredi Saint	25.03.2016	x	x	x
Ostermontag - Easter Monday - Lundi de Pâques	28.03.2016	x	x	x
Nationalfeiertag - National Holiday - Fête nationale	27.04.2016		x	
Christi Himmelfahrt - Ascension Day - Ascension	05.05.2016	x	x	x
Pfingstmontag - Whit Monday - Lundi de Pentecôte	16.05.2016	x	x	x
Fronleichnam - Corpus Christi - Fête-Dieu	26.05.2016	x		
Mariä Himmelfahrt - Assumption Day - Assomption	15.08.2016	x		
Nationalfeiertag - National Holiday - Fête nationale	03.10.2016	x		x
Allerheiligen - All Saints' Day - Toussaint	01.11.2016	x	x	x
2. Weihnachtstag - Boxing Day - Lendemain de Noël	26.12.2016	x	x	x

Annex 2

2017

JANUARY

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FEBRUARY

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MARCH

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APRIL

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MAY

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JULY

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AUGUST

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SEPTEMBER

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OCTOBER

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NOVEMBER

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DECEMBER

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Tage / Days / Jours		München Munich	Den Haag The Hague La Haye	Berlin
Heilige Drei Könige - Epiphany – Epiphanie	06.01.2017	x		
Karfreitag - Good Friday - Vendredi Saint	14.04.2017	x	x	x
Ostermontag - Easter Monday - Lundi de Pâques	17.04.2017	x	x	x
Nationalfeiertag - National Holiday - Fête nationale	27.04.2017		x	
Maifeiertag - Labour Day - Fête du Travail	01.05.2017	x	x	x
Tag der Befreiung - Liberation Day - Journée de la Libération	05.05.2017		x	
Christi Himmelfahrt - Ascension Day - Ascension	25.05.2017	x	x	x
Pfingstmontag - Whit Monday - Lundi de Pentecôte	05.06.2017	x	x	x
Fronleichnam - Corpus Christi - Fête-Dieu	15.06.2017	x		
Mariä Himmelfahrt - Assumption Day – Assomption	15.08.2017	x		
Nationalfeiertag - National Holiday - Fête nationale	03.10.2017	x		x
Allerheiligen - All Saints' Day – Toussaint	01.11.2017	x	x	x
1. Weihnachtstag – Christmas Day - Jour de Noël	25.12.2017	x	x	x
2. Weihnachtstag - Boxing Day - Lendemain de Noël	26.12.2017	x	x	x