



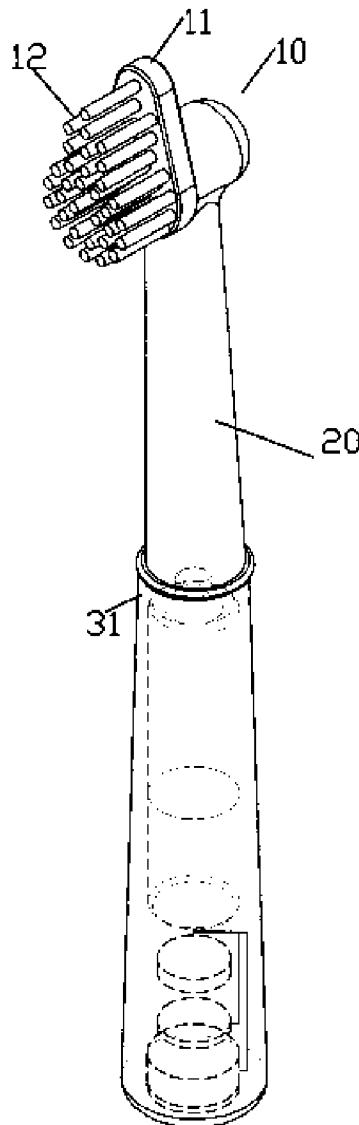
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(19) **United States**(12) **Patent Application Publication**
Chen(10) **Pub. No.: US 2011/0041270 A1**(43) **Pub. Date: Feb. 24, 2011**(54) **TOOTHBRUSH WITH EDUCATION
FUNCTION**(52) **U.S. Cl. 15/106**(57) **ABSTRACT**(76) **Inventor: Hsuan-Ju Chen, Taipei City (TW)**

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Taipei 235 (TW)**(21) **Appl. No.: 12/546,664**(22) **Filed: Aug. 24, 2009****Publication Classification**(51) **Int. Cl.**
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A toothbrush with education function comprises a hair portion including a bottom plate; a plurality of hairs being planted on the bottom plate; a handle portion including a slender portion and an enlarged portion; the enlarged portion including a chamber; a battery set; a circuit and a speaker being received in the chamber; a circuit including a processor and a memory; the processor having a function of speech processing; and the memory serving to store speech contents about a method of brushing teeth; a speaker for receiving speech signals from the processor and then playing the speech signals; a display; a hair plate for locating the hairs; the hair plate being loosely located within a recess of the bottom plate; and a pressure sensor installed at a bottom side of the hair plate and thus at an upper side of the bottom surface of the recess.



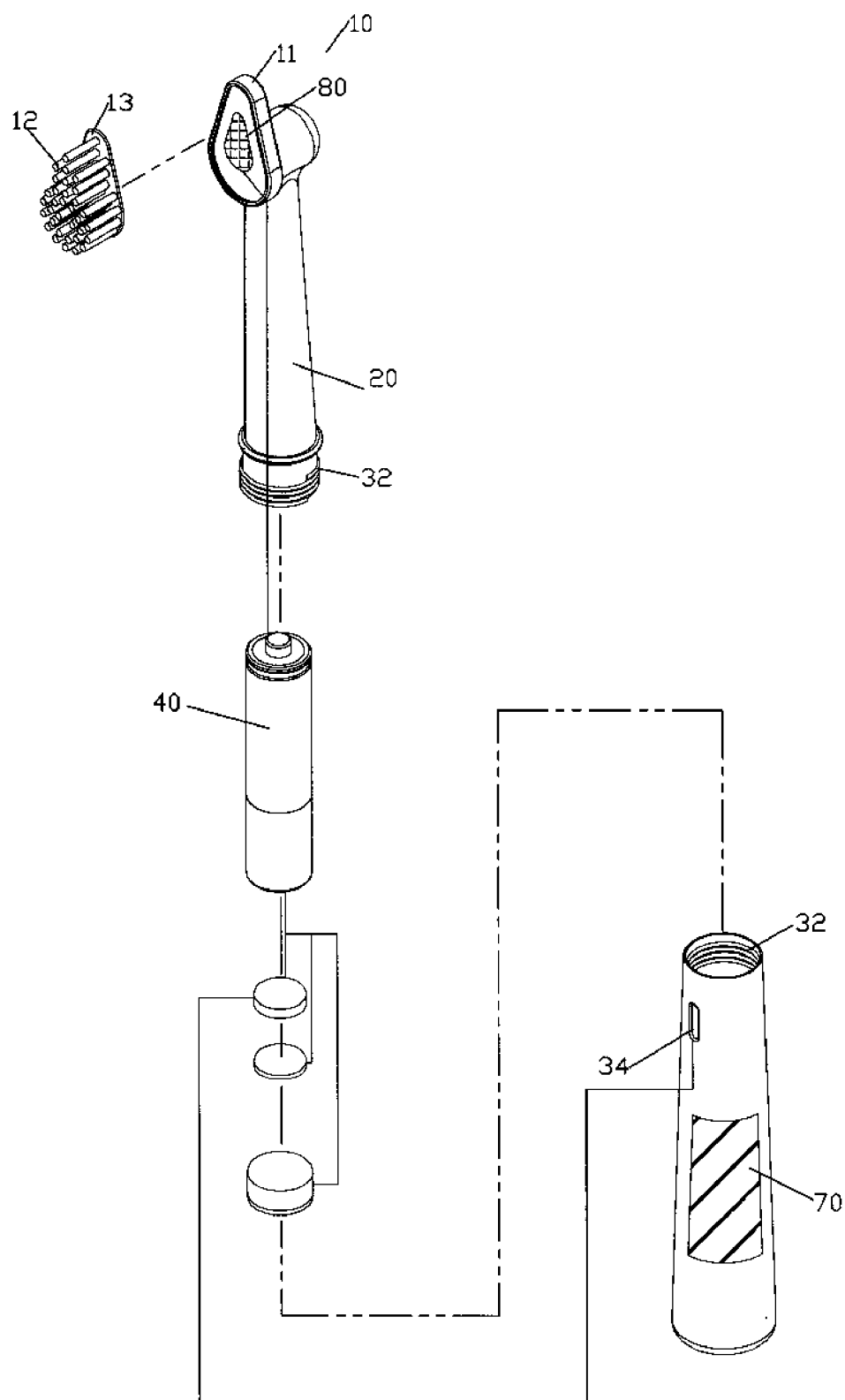


Fig. 1

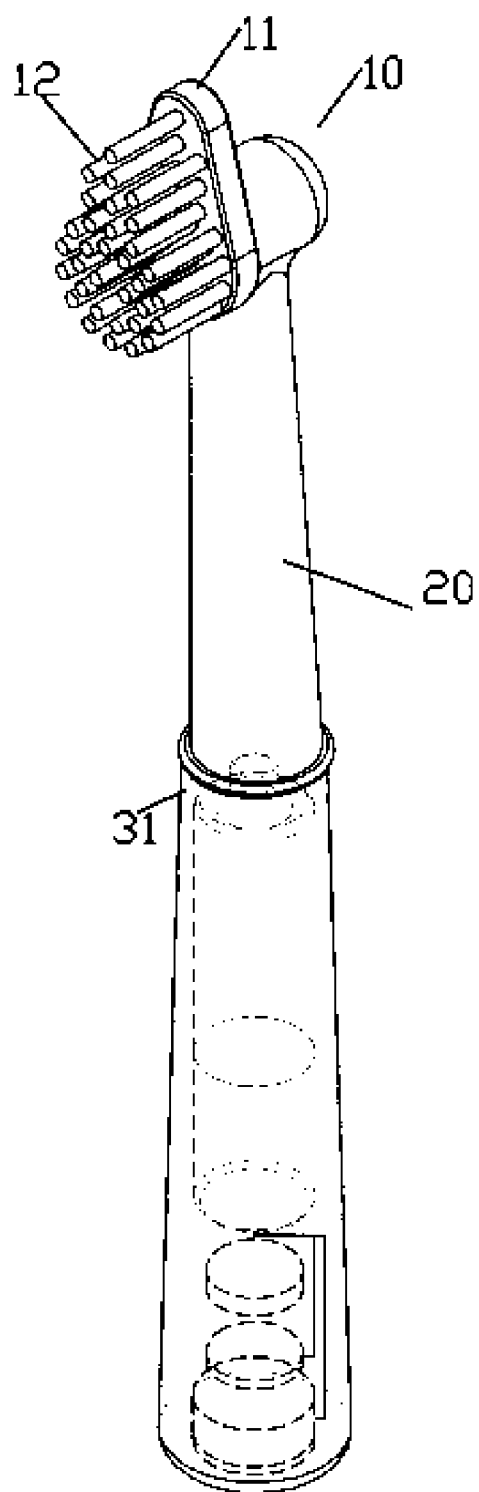


Fig. 2

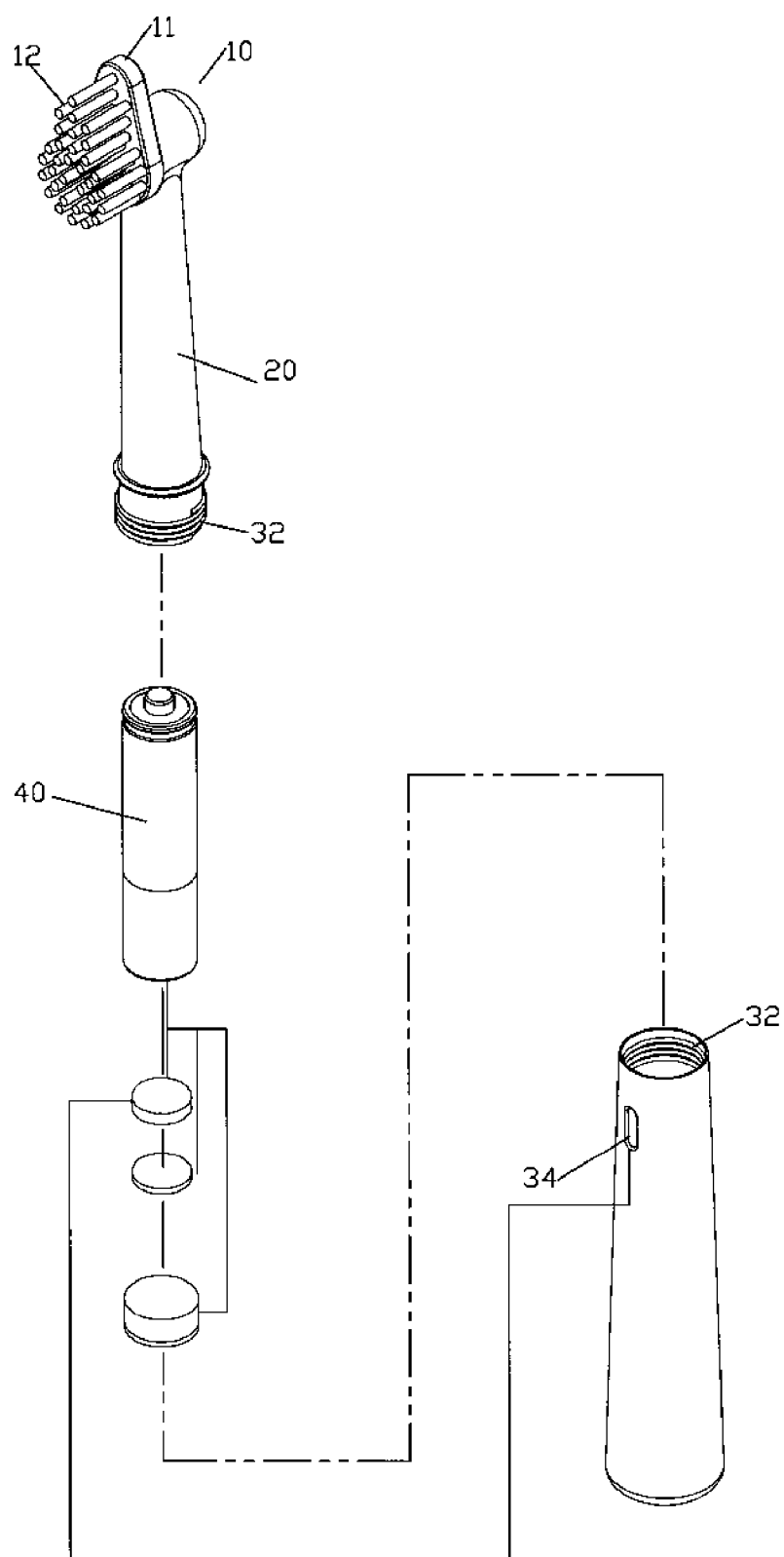


Fig. 3

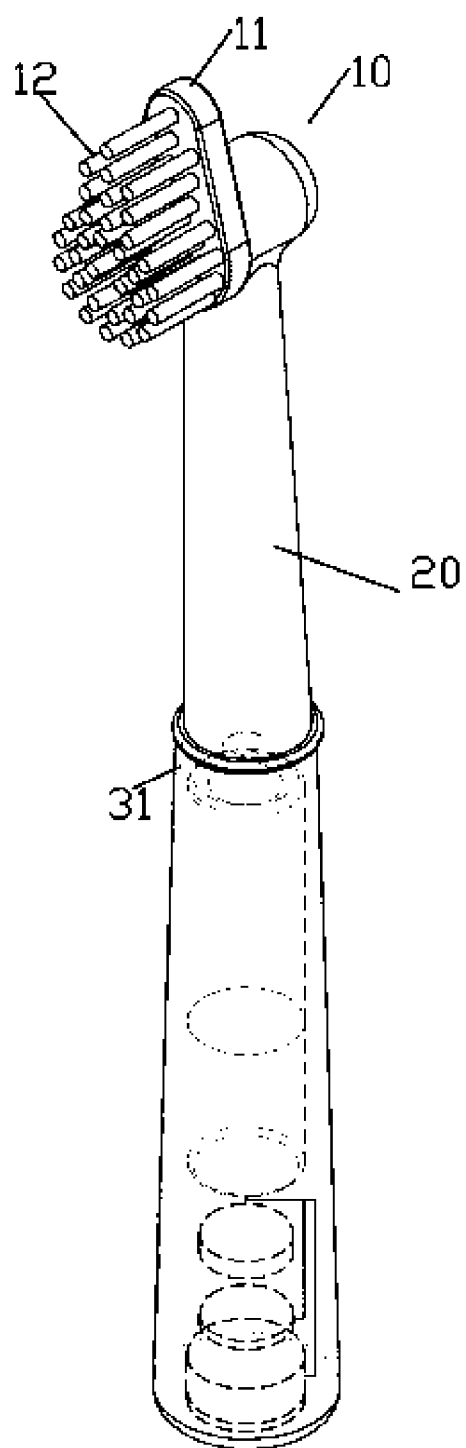


Fig. 4

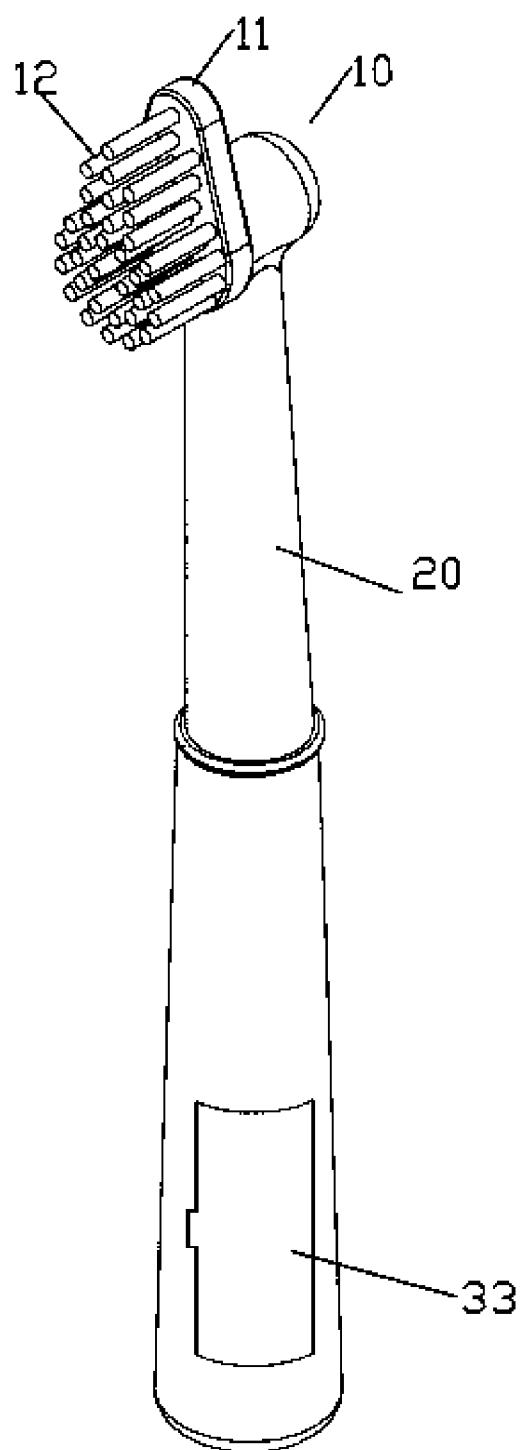


Fig. 5

TOOTHBRUSH WITH EDUCATION FUNCTION

FIELD OF THE INVENTION

[0001] The present invention relates to toothbrushes, and in particular to a toothbrush with education function. In brushing teeth, the toothbrush will play a speech to teach the user to brush the teeth according the sequences of the actions indicated by the toothbrush.

BACKGROUND OF THE INVENTION

[0002] Brushing teeth is a daily action in human life. It is often that one must brush the teeth one to three times one day. However, in brushing teeth, if the user only weaves the toothbrush out of order. It will induce that dregs on the slits between the teeth can not be removed effectively. For a long time, germs will generate and induce the disease of the teeth. **[0003]** Therefore, it is necessary to have an effective method for brushing teeth and people habitually brushes the teeth based on the method but it is difficult to teach a child by only one time or several times. To cause a child to brush the teeth based on an effective method, it is necessary to alert the child again and again as the child is brushing the teeth, but this will make those teaching the child feel inconveniently.

SUMMARY OF THE INVENTION

[0004] Accordingly, the object of the present invention is to provide a toothbrush with education function. In brushing teeth, the toothbrush will play a speech to teach the user to brush the teeth according the sequences of the actions indicated by the toothbrush.

[0005] Another object of the present invention is to provide a toothbrush with education function which can sense the pressure applied to the teeth from the toothbrush as the user brush the teeth so as to provide an alert to the user whether the applied force to the teeth is proper.

[0006] To achieve above objects, the present invention provides a toothbrush with education function comprising: a hair portion including a bottom plate; a plurality of hairs being planted on the bottom plate; a handle portion including a slender portion and an enlarged portion; the slender portion being connected to the bottom plate of the hair portion; the enlarged portion being connected to the slender portion and including a chamber; a battery set received in the chamber and including at least one battery; a circuit including a processor and a memory; the processor having a function of speech processing; and the memory serving to store speech contents about a method of brushing teeth; a speaker for receiving speech signals from the processor and then playing the speech signals; and wherein when a user uses the toothbrush, the processor can be actuated so as to drive the speaker to play the speech contents to learn a child to brush the teeth correctly.

[0007] Moreover, the toothbrush with education function further comprises a display connected to the processor for presenting various data and figures; a hair plate installed in a recess at an upper surface of the bottom plate; the hairs being installed to the hair plate; the hair plate being loosely located within the recess; an upper of the recess being reduced with a small size than other portion of the recess so as to confine the hair plate within the recess; a pressure sensor installed at a bottom side of the hair plate and thus at an upper side of the bottom surface of the recess; wherein in brushing the teeth, a

pressure will be applied to the hairs; the pressure will be transferred to the pressure sensor that the pressure sensor will detect the pressure and then transfer a value of the pressure to the processor.

[0008] The various objects and advantages of the present invention will be more readily understood from the following detailed description when read in conjunction with the appended drawing.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. 1 is an exploded view of the first embodiment of the present invention.

[0010] FIG. 2 is an assembly view of the first embodiment of the present invention.

[0011] FIG. 3 is a schematic view of the second embodiment of the present invention.

[0012] FIG. 4 is an assembly view of the second embodiment of the present invention.

[0013] FIG. 5 is an assembly view of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0014] In order that those skilled in the art can further understand the present invention, a description will be provided in the following in details. However, these descriptions and the appended drawings are only used to cause those skilled in the art to understand the objects, features, and characteristics of the present invention, but not to be used to confine the scope and spirit of the present invention defined in the appended claims.

[0015] With reference to FIGS. 1 and 2, the toothbrush with educational function according to the present invention is illustrated. The toothbrush of the present invention includes the following elements.

[0016] A hair portion 10 includes a bottom plate 11. A plurality of hairs are planted on the bottom plate 11 for cleaning teeth and gums.

[0017] A handle portion includes a slender portion 20 and an enlarged portion 30.

[0018] The slender portion 20 is connected to the bottom plate 11 of the hair portion 10.

[0019] The enlarged portion 30 is connected to the slender portion 20 and includes a chamber 31 for receiving other elements. In this Embodiment, an upper side of the enlarged portion 30 had a screwing portion 32 for detaching the enlarged portion 30 from the handle portion 10.

[0020] A battery set 40 is received in the chamber 31 and includes at least one battery.

[0021] A circuit 50 includes a processor 51 and a memory 52. The processor 51 has the function of speech processing. The memory 52 serves to store speech contents about a method of brushing teeth.

[0022] A speaker 60 serves for receiving speech signals from the processor 51 and then playing the speech signals.

[0023] A switch 33 is formed at a lateral side of the enlarged portion 30 for actuating the battery set 40.

[0024] A software function of the present invention presented by the processor 51 is that when a user uses the toothbrush of the present invention. He (or she) presses the switch 33 at the lateral side of the enlarged portion 30. The processor 51 will be actuated so as to drive the speaker 60 to play a section of speech which serves to teach a child to brush the teeth correctly, for example by Bass teeth brush method.

[0025] Furthermore, the present invention provides a background music in playing the speech from the speaker 60.

[0026] Referring to FIGS. 3 and 4, the second embodiment of the present invention is illustrated. The second embodiment of the present invention is an extension of the first result. Thus the same elements of the first and second embodiments are indicated by the numerals and have the same functions and structures. In the following, only those difference therebetween are illustrated.

[0027] A display 70 is connected to the processor 51 for presenting various data and figures.

[0028] A hair plate 13 is installed in a recess 14 at an upper surface of the bottom plate 11. The hairs 12 are installed to the hair plate 13. The hair plate 13 is loosely located within the recess 14. An upper of the recess 14 is reduced with a small size than other portion of the recess 14 so as to confine the hair plate 13 within the recess 14.

[0029] A pressure sensor 80 is installed at a bottom side of the hair plate 13 and thus at an upper side of the bottom surface of the recess 14. In brushing the teeth, a pressure will be applied to the hairs 12. The pressure will be transferred to the pressure sensor 80; and the pressure sensor 80 will detect the pressure and then transfer a value of the pressure to the processor 51. The processor 51 can display the value on the display 70 or emit a sound from the speaker 60 to alert the user that the applied force to the teeth is too great or too small so as to teach the user to apply a proper force in brushing the teeth.

[0030] With reference to FIG. 5, it is illustrated that no screwing portion 32 is used. A lateral side of the enlarged portion 30 can be formed with a cover 33 for updating of the battery set 40.

[0031] It should be noted that the toothbrush of the present invention may be an electromotive toothbrush.

[0032] The present invention is thus described, it will be obvious that the same may be varied in many ways. Such variations are not to be regarded as a departure from the spirit and scope of the present invention, and all such modifications as would be obvious to one skilled in the art are intended to be included within the scope of the following claims.

What is claimed is:

1. A toothbrush with education function comprising;
 - a hair portion including a bottom plate; a plurality of hairs being planted on the bottom plate;
 - a handle portion including a slender portion and an enlarged portion;
 - the slender portion being connected to the bottom plate of the hair portion; the enlarged portion being connected to the slender portion and including a chamber; a battery set; a circuit and a speaker being received in the chamber; the battery set including at least one battery; a circuit including a processor and a memory; the processor hav-

ing a function of speech processing; and the memory serving to store speech contents about a method of brushing teeth; a speaker for receiving speech signals from the processor and then playing the speech signals; and

wherein when a user uses the toothbrush, the processor can be actuated so as to drive the speaker to play the speech contents to learn a child to brush the teeth correctly.

2. The toothbrush with education function as claimed in claim 1, wherein the method is a bass teeth brushing method.

3. The toothbrush with education function as claimed in claim 1, wherein background music is played as the speech content is played.

4. The toothbrush with education function as claimed in claim 1, further comprising:

a display connected to the processor for presenting various data and figures;

a hair plate installed in a recess at an upper surface of the bottom plate; the hairs being installed to the hair plate; the hair plate being loosely located within the recess; an upper of the recess being reduced with a small size than other portion of the recess so as to confine the hair plate within the recess;

a pressure sensor installed at a bottom side of the hair plate and thus at an upper side of the bottom surface of the recess;

wherein in brushing the teeth, a pressure will be applied to the hairs; the pressure will be transferred to the pressure sensor; the pressure sensor will detect the pressure and then transfer a value of the pressure to the processor.

5. The toothbrush with education function as claimed in claim 4, wherein the processor instructs the display to present a value of the pressure.

6. The toothbrush with education function as claimed in claim 4, wherein the processor instructs the speaker to emit sounds to alert the user that the applied force to the teeth is too great or too small.

7. The toothbrush with education function as claimed in claim 1, wherein the enlarged portion had a screwing portion for detaching the enlarged portion from the handle portion and updating the battery.

8. The toothbrush with education function as claimed in claim 1, wherein the enlarged portion has a cover for updating the battery.

9. The toothbrush with education function as claimed in claim 1, wherein a switch is formed at a lateral side of the enlarged portion for actuating the battery set.

10. The toothbrush with education function as claimed in claim 1, wherein the toothbrush is an electromotive toothbrush.

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