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A dental tool for prevention of tooth decay and gum disease

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Abstract

A dental tool for prevention of tooth decay and gum disease includes an elongate body bearing a handle. A floss head is located at one end of the body and an inter-dental brush at the opposite end. The inter-dental brush may be fixed to the elongate body or alternatively it may be received into a socket formed into the elongate body so that the inter-dental brush can be replaced. A flexible region may be included between the floss head and the elongate body for angling of the floss head during use. In one embodiment the dental tool is formed of bamboo which may be heat treated to repel moisture.

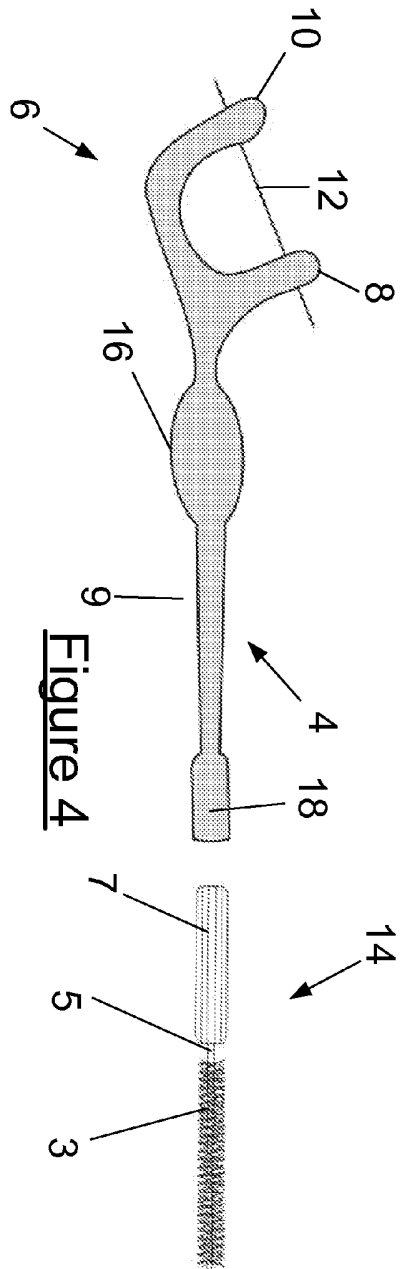


Figure 4

AUSTRALIA
PATENTS ACT 1990

COMPLETE SPECIFICATION

**A DENTAL TOOL FOR PREVENTION OF TOOTH DECAY AND
GUM DISEASE**

The invention is described in the following statement:

A DENTAL TOOL FOR PREVENTION OF TOOTH DECAY

TECHNICAL FIELD

- 5 The present invention relates to dental tools for removing plaque, food and associated food debris from in between teeth to thereby assist in the prevention of tooth decay and gum disease.

BACKGROUND

- 10 The discussion of any prior art documents, techniques, methods or apparatus is not to be taken to constitute any admission or evidence that such prior art forms, or ever formed, part of the common general knowledge.

- 15 Tooth decay develops when minerals are lost from the tooth due to acids produced by plaque bacteria, which may eventually lead to a cavity.

It has been estimated that nine out of ten dental cavities could be prevented by daily flossing of teeth.

- 20 During flossing the floss makes contact with the tooth, and follows the shape of the tooth down under the gums to aid in the removal of embedded plaque and food debris.

- 25 Gum disease is the most common cause of tooth loss and therefore the use of a bristled, inter-dental brush is advantageous since it can reduce gum inflammation between teeth and bleeding, if present. The inter-dental brush pushes out any excess plaque and food debris that floss cannot remove.

- 30 Unfortunately, many people do not floss regularly and of those that do, even fewer make use of an inter-dental brush. It would be desirable if an apparatus was provided that would encourage the use of flossing and the use of an inter-dental brush.

SUMMARY OF THE INVENTION

According to a first aspect of the present invention, there is provided a dental

5 tool including:

an elongate body;

a floss head at a first end of the elongate body; and

an inter-dental brush at a second end of the elongate body.

10 Preferably the tool includes a handle fast with the elongate body and disposed between the first end and the second end.

The inter-dental brush may be detachable from the elongate body for replacement thereof.

15

Preferably a flexible region is disposed between the floss head and the elongate body for angling of the floss head during use.

At least the elongate body may be comprised of bamboo.

20

In a preferred embodiment the elongate body includes a socket for holding the inter-dental brush.

The dental tool may include:

25

an elongate body;

a floss head at a first end of the elongate body; and

a socket for receiving an inter-dental brush at a second end of the elongate body.

30 **BRIEF DESCRIPTION OF THE DRAWINGS**

Preferred features, embodiments and variations of the invention may be discerned from the following Detailed Description which provides sufficient information for those skilled in the art to perform the invention.

The Detailed Description is not to be regarded as limiting the scope of the preceding Summary of the Invention in any way. The Detailed Description will make reference to a number of drawings as follows:

5 Figure 1 is a side plan view of a dental tool according to a first embodiment of the present invention.

Figure 2 is a front view of the dental tool of Figure 1.

Figure 3 is a rear view of the dental tool of Figure 1.

Figure 4 depicts the dental tool of Figure 1 with dental-brush disengaged.

Figure 5 depicts a first use of the dental tool of Figure 1.

10 Figure 6 depicts a second use of the dental tool of Figure 1.

Figure 7 depicts a third use of the dental tool of Figure 1.

Figure 8 depicts a dental tool according to a further embodiment of the present invention.

15 DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Referring now to Figures 1 to 4, there is depicted a dental tool 4 according to a preferred embodiment of the present invention. The dental tool 4 has an elongate body 9 with a floss head 6, or as it is sometimes called, a floss "harp" at a first end and an inter-dental brush 14 at a second opposite end. The inter-dental brush includes a holder 7, a stem 5 extending from the holder, and bristles 3 in turn extending from the stem 5.

25 A handle 16 is formed in the elongate body 9 between the first and second ends and to aid in holding the dental tool during use. The region of the elongate body between handle 16 and floss head 6 may be flexible so that the floss head 6 can be angled relative to the elongate body to assist in accurately placing the floss 12 during use.

30 The floss head 6 comprises opposed arms 8, 10, between which is fastened a piece of floss 12. The floss may be mint flavoured, for example, if desired.

In the embodiment of Figures 1 to 4, the inter-dental brush 14 is detachably engaged to the elongate body 9 by virtue of a socket 18 formed as a single

piece with the elongate body. The socket 18 receives a handle 7 of the inter-dental brush 14.

5 Figure 4 shows the dental tool 4 with the inter-dental brush 14 detached from socket. It will be realised that since the inter-dental brush can be replaceably detached from the socket, replacement brushes may be used when necessary. For example replacements may be used as brushes wear out or alternatively, smaller or larger brushes may be used as appropriate to a user's various inter-tooth gaps. The smaller and larger inter-dental brushes may be
10 colour coded if desired.

While the socket is shown formed upon the end of the elongate body 9 in Figure 2, it could instead be formed at the end of the inter-dental brush and be fitted over a plug-like end of the elongate body to effect attachment thereto.

15 Figures 5 to 7 illustrate the use of the dental tool according to the embodiment of Figures 2 to 4 to floss and brush in between a set of teeth.

20 A further embodiment of the invention is depicted in Figure 8, wherein the stem 5 of inter-dental brush 14 is non-removably attached to elongate body 9 so that neither socket 18 of the embodiment of Figure 2, nor the handle 7 of the inter-dental brush 14 of Figure 2 are present.

25 While the tool 4 may be moulded from a suitable plastic, It is preferable that the elongate body and floss head of the dental tool be made of a bamboo, which is an environmentally sustainable timber, is biodegradable and environmentally friendly. In order to make the bamboo water-resistant it may be heat treated.

30 Preferably the bristles 3 of the inter-dental brush are made from a material, for example a polymer, which is resilient to microbial growth. Preferably the bristles are not nylon, which is not environmentally friendly.

It will be appreciated that a dental tool according to an embodiment of the present invention encourages the user to both floss and perform inter-dental brushing during the same cleaning sessions thereby assisting in reducing tooth decay and gum disease.

5

Dental tools according to embodiments of the present invention may be used at home and in dental practices, for example in the use of and during orthodontic treatment, crown and bridge work, dental implants and gum disease treatments.

10

In compliance with the statute, the invention has been described in language more or less specific to structural or methodical features. The term "comprises" and its variations, such as "comprising" and "comprised of" is used throughout in an inclusive sense and not to the exclusion of any additional features. It is to be understood that the invention is not limited to specific features shown or described since the means herein described comprises preferred forms of putting the invention into effect. The invention is, therefore, claimed in any of its forms or modifications within the proper scope of the appended claims appropriately interpreted by those skilled in the art.

15

The claims defining the invention are as follows:

1. A dental tool including:
an elongate body;
a floss head at a first end of the elongate body; and
an inter-dental brush at a second end of the elongate body.
2. A handle fast with the elongate body and disposed between the first end and the second end.
3. A dental tool according to any one of the preceding claims wherein the inter-dental brush is detachable from the elongate body for replacement thereof.
4. A dental tool according to any one of the preceding claims including a flexible region between the floss head and the elongate body for angling of the floss head during use.
5. A dental tool according to any one of the preceding claims wherein at least the elongate body is comprised of bamboo.
6. A dental tool according to claim 3, wherein the elongate body includes
a socket for holding the inter-dental brush.
7. A dental tool including:
an elongate body;
a floss head at a first end of the elongate body; and
a socket for receiving an inter-dental brush at a second end of the elongate body.
8. A dental tool substantially as described herein with reference to Figures 1 to 4.

9. A dental tool that is substantially as described herein with reference to Figure 8.

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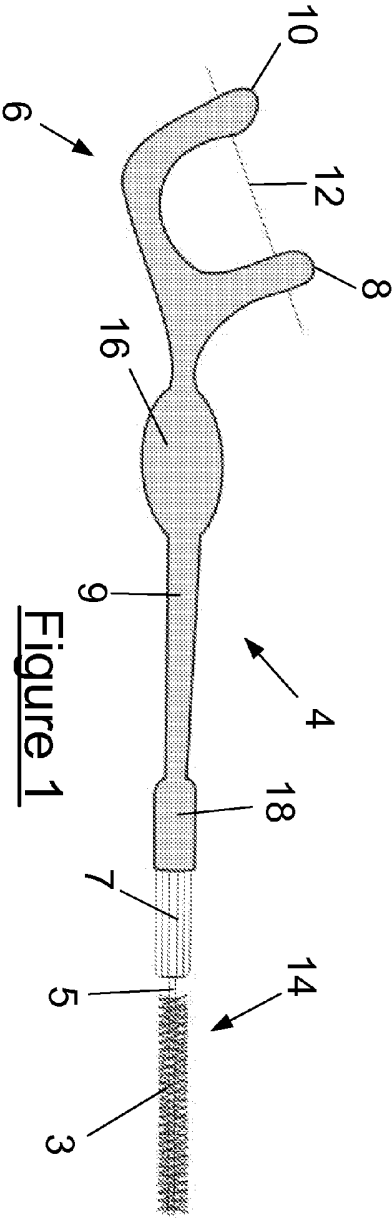


Figure 1

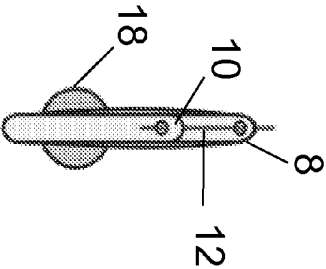


Figure 2

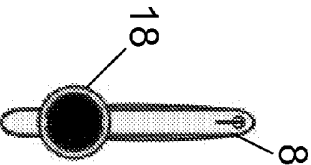


Figure 3

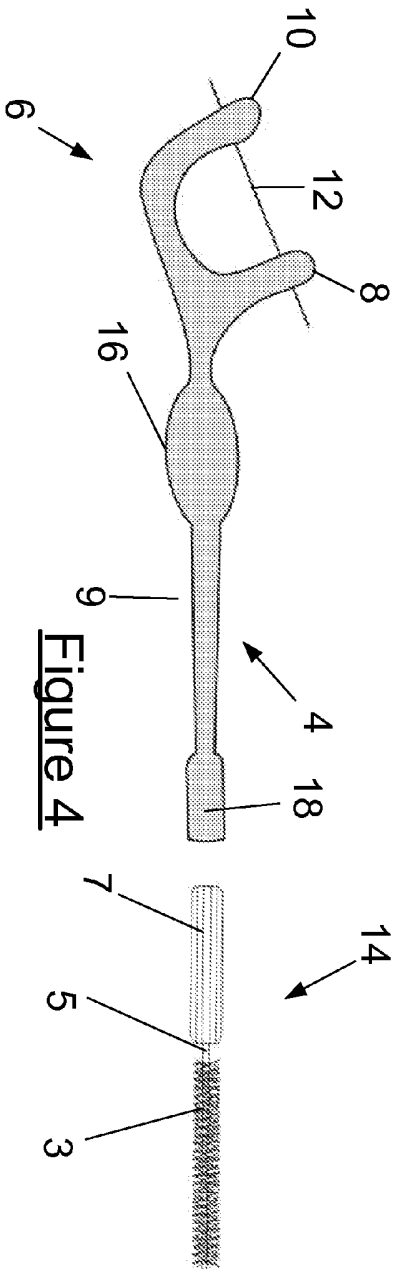


Figure 4

Figure 5

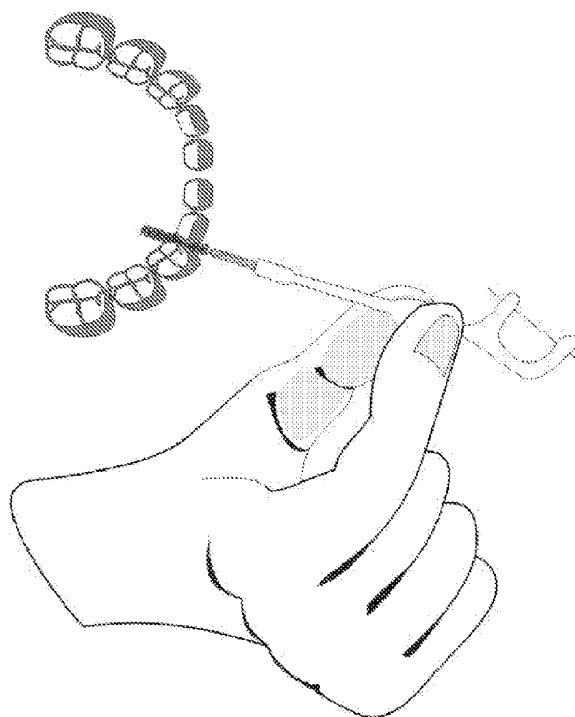
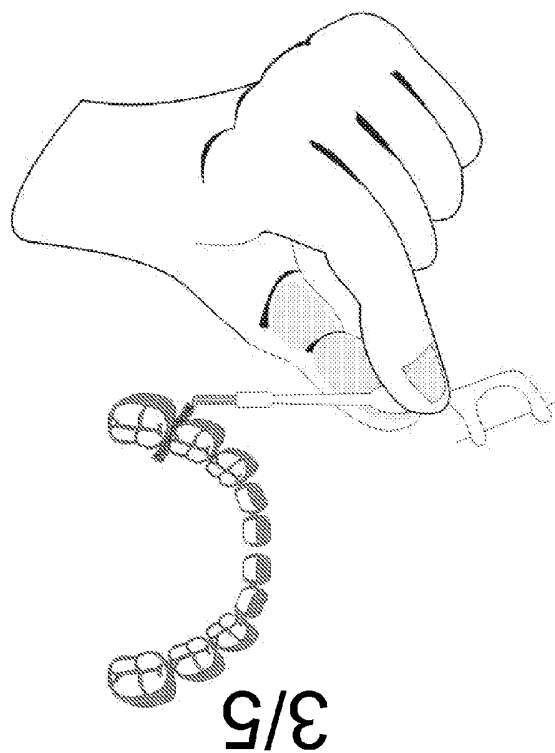


Figure 6



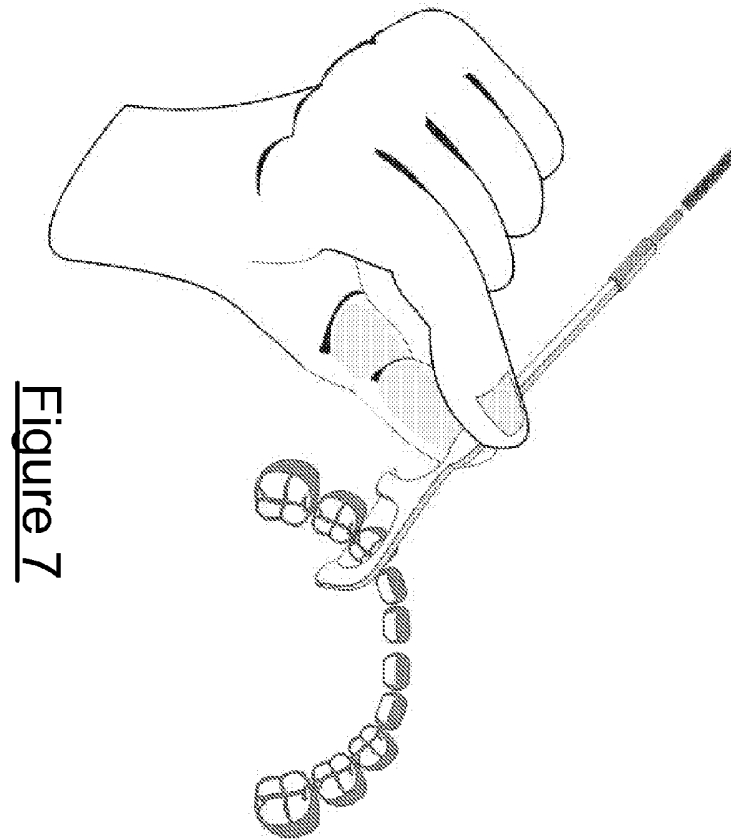


Figure 7

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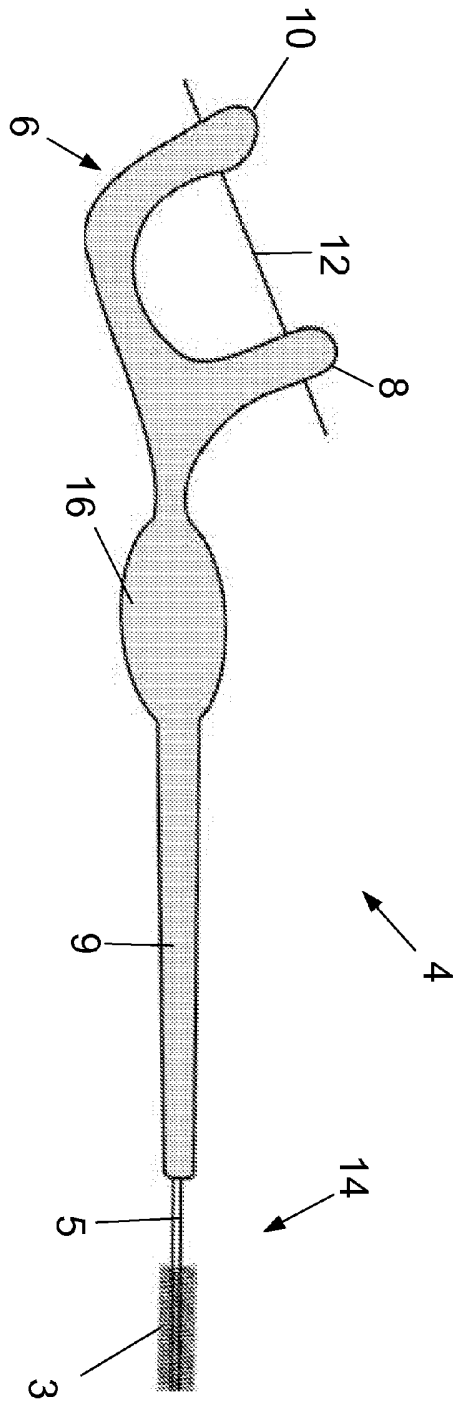


Figure 8

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