

QUAD-DIRECTIONAL ANGLE ADJUSTMENT APPARATUS AND QUAD-DIRECTIONAL ANGLE ADJUSTEMENT BRUSH USING SAME

Field of Invention

5 The present invention relates to a quad-directional angle adjustment apparatus and a quad-directional angle adjustment brush using same. In general, brushes, especially toothbrushes are straight-type those which may not adjust their angles. However, a variety of toothbrushes which may adjust their angles are recently developed so as to help users to brush their teeth more conveniently and to every
10 corner of the mouth.

Background of Invention

Conventional, angle-adjustable toothbrushes are provided in a variety of methods, however toothbrushes which may adjust angles to every direction are
15 complicated to be assembled, thereby causing a problem which reduces productivity. Accordingly, the angles are made to adjustable in limited directions such as left, right, forward, and backward, and thus, the toothbrushes become less complicated to be assembled. However, this is insufficient to help users to conveniently brush their teeth.

20 Disclosure

Technical Problem

The task of the present invention is applied to solve the above-mentioned defects of the angle-adjustable toothbrushes and is to provide a quad-directional angle adjustment apparatus and a quad-directional angle adjustment brush using same
25 which may be easily assembled and adjust angles in four directions, that is, left, right,

forward, and backward, thereby improving productivity and providing users with convenience in brushing their teeth.

Technical Solution

5 For solving the above task, a quad-directional angle adjustment apparatus and a quad-directional angle adjustment brush using same according to the present invention comprises a toothbrush head unit having a C-shaped connection portion, which includes an assembly opening, in one side of the head unit and a toothbrush handle unit having a C-shaped connection portion, which includes an assembly opening, in one side of the handle unit, characterized in that the C-shaped connection portions provided in one side of the toothbrush head unit and the toothbrush handle unit have a convex connecting portion on an inner surface and a concave connecting portion on an outer surface.

Advantageous Effects

15 A quad-directional angle adjustment apparatus and a quad-directional angle adjustment brush using same according to the present invention, especially a toothbrush achieves the effect of helping users to brush their teeth more conveniently and to every corner of the mouth in comparison with conventional, straight-type toothbrushes. In addition, it can be effectively achieved that the toothbrush according to the present invention may reduce cost of production because being simply assembled, and thus, an angle-adjustable toothbrush with the purchasing power may be provided at reasonable prices, in comparison with conventional, angle-adjustable toothbrushes. Furthermore, when a quad-directional angle adjustment structure of the present invention is applied to an interdental brush, users may conveniently use the

interdental brush so as to remove interdental food debris much conveniently through a variety of angle adjustments.

Description of Drawings

5 FIG. 1 illustrates a toothbrush head unit which has a C-shaped connection portion in one side according to the present invention in a perspective view.

 FIG. 2 illustrates a toothbrush handle unit which has a C-shaped connection portion in one side according to the present invention in a perspective view.

 FIG. 3 illustrates an assembled state of a toothbrush head unit and a toothbrush
10 handle unit according to the present invention in a perspective view.

 FIG. 4 illustrates a toothbrush which is angled forward according to the present invention in a perspective view.

 FIG. 5 illustrates a toothbrush which is angled backward according to the present invention in a perspective view.

15 FIG. 6 illustrates a toothbrush which is angled to the left according to the present invention in a perspective view.

 FIG. 7 illustrates a toothbrush which is angled to the right according to the present invention in a perspective view.

20 <Description of the Reference Numerals in the Drawings>

 100: toothbrush head unit

 200: toothbrush handle unit

 110, 210: C-shaped connection portion

 120, 220: assembly opening

25 130, 230: convex connecting portion

140, 240: concave connecting portion

Best Mode

Hereinafter, a representative product among quad-directional angle adjustment
5 apparatus and quad-directional angle adjustment brushes, that is, a toothbrush is
described in detail.

As a structure for solving the above-mentioned task, a quad-directional angle
adjustment toothbrush according to the present invention comprises a toothbrush head
unit 100 having a C-shaped connection portion 110, which includes an assembly
10 opening 120, in one side of the head unit and a toothbrush handle unit 200 having a C-
shaped connection portion 210, which includes an assembly opening 220, in one side
of the handle unit, characterized in that the C-shaped connection portions 110 and 210
provided in one side of the toothbrush head unit 100 and the toothbrush handle unit
200 have a convex connecting portion 130 and 230 on an inner surface and a concave
15 connecting portion 140 and 240 on an outer surface.

Hereinafter, the quad-directional angle adjustment toothbrush with such a
configuration is described in detail with reference to the accompanying drawings.

FIG. 1 illustrates a toothbrush head unit which has a C-shaped connection
portion in one side according to the present invention in a perspective view.

20 FIG. 2 illustrates a toothbrush handle unit which has a C-shaped connection
portion in one side according to the present invention in a perspective view.

FIG. 3 illustrates an assembled state of a toothbrush head unit and a toothbrush
handle unit according to the present invention in a perspective view.

FIG. 4 illustrates a toothbrush which is angled forward according to the present
25 invention in a perspective view.

FIG. 5 illustrates a toothbrush which is angled backward according to the present invention in a perspective view.

FIG. 6 illustrates a toothbrush which is angled to the left according to the present invention in a perspective view.

5 FIG. 7 illustrates a toothbrush which is angled to the right according to the present invention in a perspective view.

As shown in FIGS. 1 and 2, the toothbrush head unit 100 and the toothbrush handle unit 200 according to the present invention respectively have the C-shaped connection portions 110 and 210 in one side. The assembly openings 120 and 220
10 are respectively formed on the C-shaped connection portions 110 and 210, and thus, workability is good when the toothbrush according to the present invention is produced, because the toothbrush is easily assembled, and the assembly openings 120 and 220 are spread so that the angle is easily adjusted, when users desire to adjust the angle of the toothbrush.

15 In addition, the convex connecting portions 130 and 230 and the concave connecting portions 140 and 240 which enable the toothbrush to be angled forward and backward as well as to the left and right in a stepwise manner are disposed on the C-shaped connection portion 110 provided in one side of the toothbrush head unit 100 and the C-shaped connection portion 210 provided in one side of the toothbrush
20 handle unit 200 in a corresponding manner.

As shown in FIG. 3, the present invention provides a quad-directional angle adjustment toothbrush by means of a simple assembly of the C-shaped connection portion 110 provided in one side of the toothbrush head unit 100 and the C-shaped connection portion 210 provided in one side of the toothbrush handle unit 200.

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Mode for Invention

Modes of carrying out the present invention may be apparently utilized for toothbrushes and various brush products including interdental brushes, etc., and are not included in preferred embodiments of the present invention. Therefore, when a
5 quad-directional angle adjustment structure of the present invention is applied as described above, preferably, the embodiments of the present invention are not limited to the brush products. Accordingly, it is apparent that the scope of the present invention may be expanded beyond the brush products.

FIGS. 4 and 5 illustrate states in which a quad-directional angle adjustment
10 toothbrush of the present invention is adjusted forward and backward in a stepwise manner. Users may conveniently adjust the angle of the toothbrush, thereby conveniently brushing even the inside of their teeth by making the toothbrush head erect.

FIGS. 6 and 7 illustrate states in which a quad-directional angle adjustment
15 toothbrush of the present invention is adjusted to the left and right in a stepwise manner. Users may conveniently adjust the angle of the toothbrush, thereby conveniently brushing the outside of their teeth even by naturally and slightly raising their arms when brushing the left and right sides of teeth.

20 Industrial Applicability

A quad-directional angle adjustment apparatus and a quad-directional angle adjustment brush using same according to the present invention, especially a toothbrush achieves the effect of helping users to brush their teeth conveniently and to every corner of the mouth in comparison with conventional, straight-type toothbrushes.
25 In addition, it can be effectively achieved that the toothbrush according to the present

invention may reduce cost of production because being simply assembled, and thus, an angle-adjustable toothbrush with the purchasing power may be provided at reasonable prices, in comparison with conventional, angle-adjustable toothbrushes.

CLAIMS

1. A quad-directional angle adjustment apparatus, comprising:
a toothbrush head unit having a C-shaped connection portion, which has an
5 assembly opening, in one side of the head unit;
and a toothbrush handle unit having a C-shaped connection portion, which has
an assembly opening, in one side of the handle unit,
characterized in that the C-shaped connection portions provided in one side of
the toothbrush head unit and the toothbrush handle unit have a convex connecting
10 portion on an inner surface and a concave connecting portion on an outer surface.

2. A quad-directional angle adjustment toothbrush, characterized in that a
toothbrush is formed in the toothbrush head unit of the quad-directional angle
adjustment apparatus as described in claim 1.

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3. A quad-directional angle adjustment interdental brush, characterized in that
an interdental brush is formed in the toothbrush head unit of the quad-directional angle
adjustment apparatus as described in claim 1.