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Kuo(10) **Pub. No.: US 2007/0102313 A1**(43) **Pub. Date: May 10, 2007**(54) **INTERDENTAL BRUSH ASSEMBLY**(30) **Foreign Application Priority Data**(76) Inventor: **Kung-Pao Kuo**, Kaohsiung city (TW)

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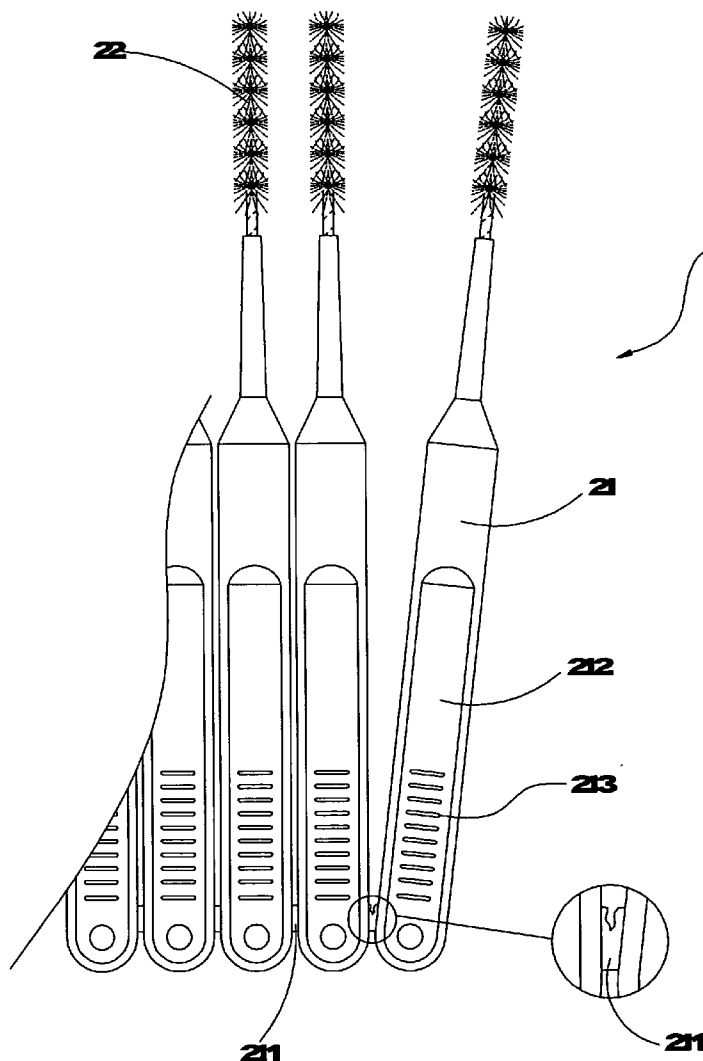
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ROSENBERG, KLEIN & LEE**3458 ELLICOTT CENTER DRIVE-SUITE 101****ELLICOTT CITY, MD 21043 (US)****Publication Classification**(51) **Int. Cl.**
B65D 83/10 (2006.01)(52) **U.S. Cl.** **206/369**(57) **ABSTRACT**

An interdental brush assembly is in particular to the connecting plates disposed between the handles of the interdental brushes. With the connecting plates, the interdental brushes combine together side by side. While in operation, the user takes one interdental brush from the interdental brush assembly and uses it. The interdental brushes, therefore, are convenient in carrying and using.

(21) Appl. No.: **11/645,169**(22) Filed: **Dec. 26, 2006****Related U.S. Application Data**

(63) Continuation-in-part of application No. 11/125,093, filed on May 10, 2005.



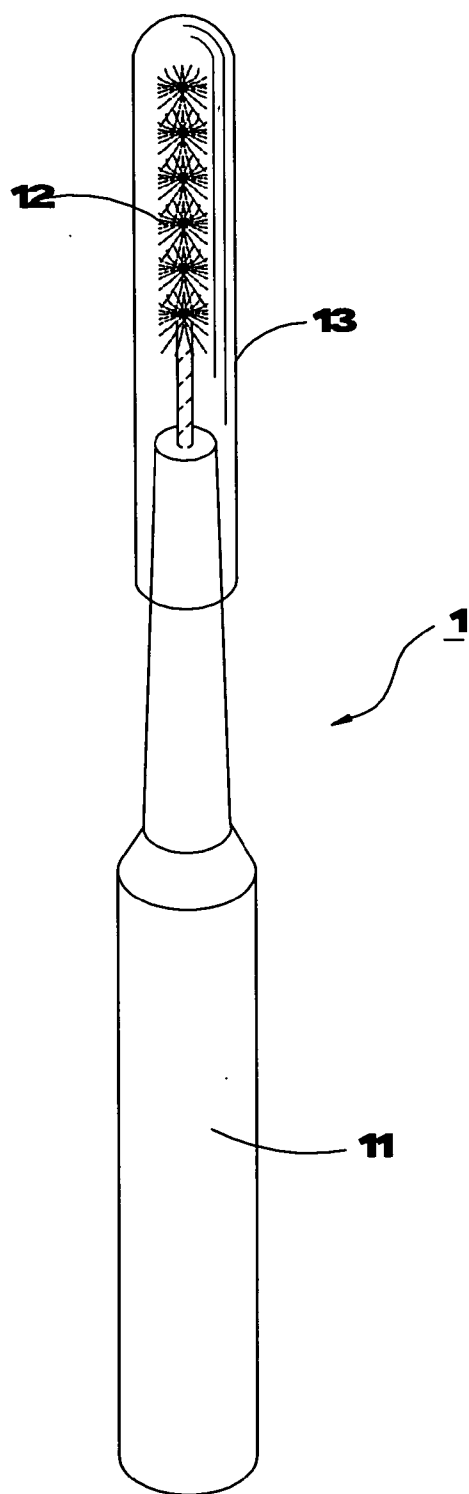


FIG 1
(PRIOR ART)

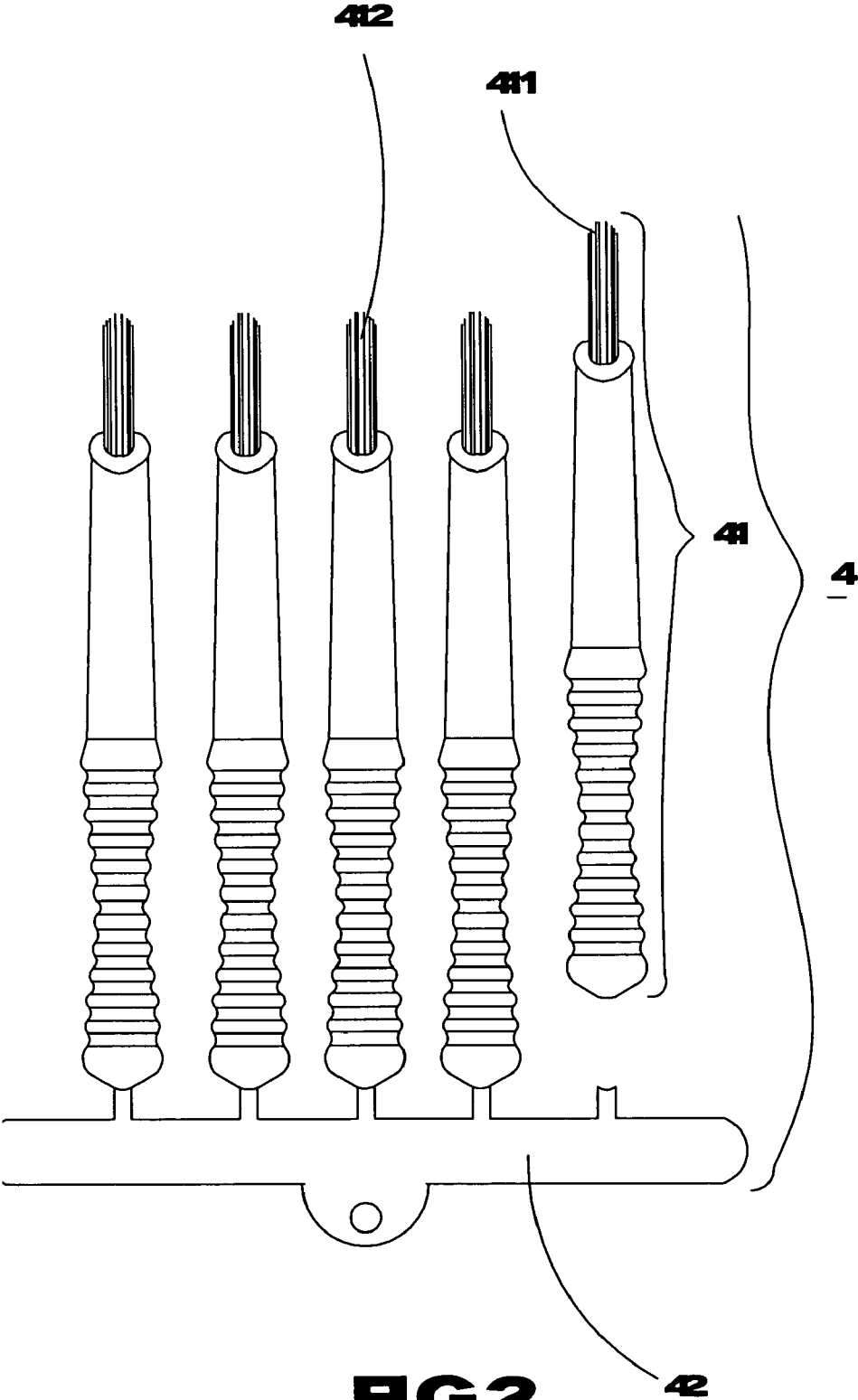


FIG 2
(FIG 2A)

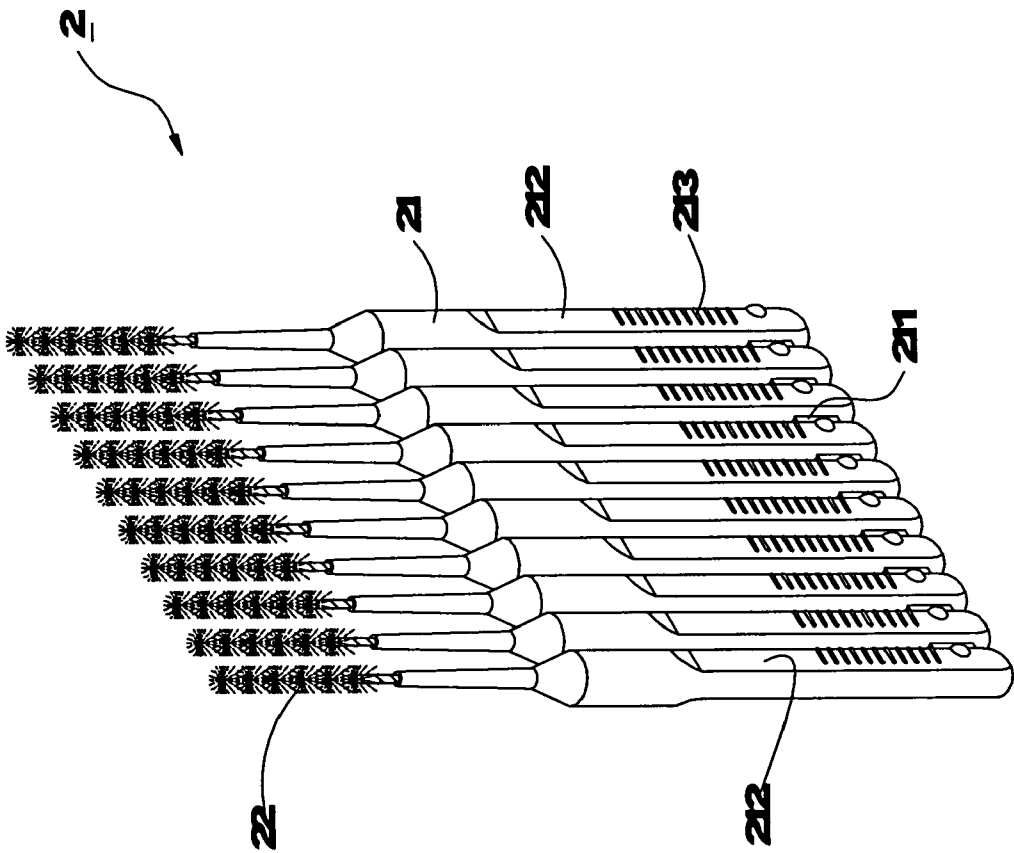


FIG 3

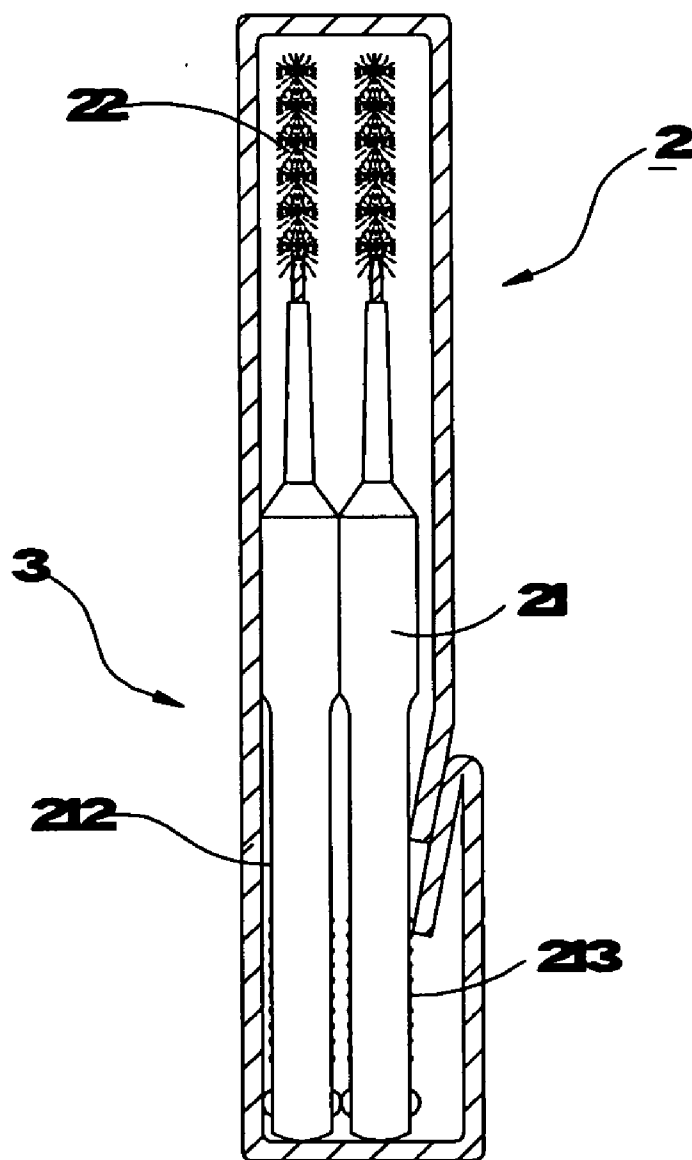


FIG 4

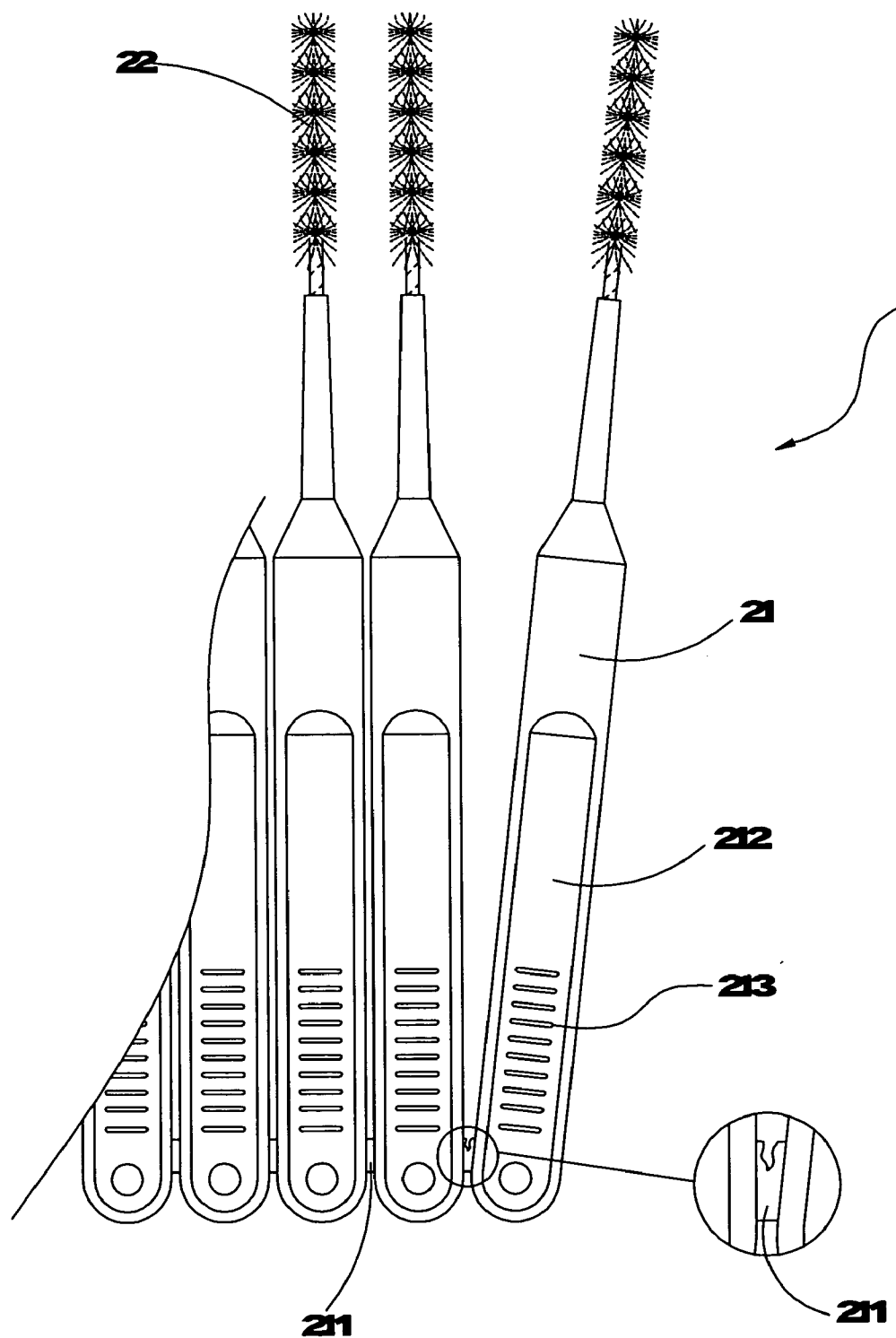


FIG 5

INTERDENTAL BRUSH ASSEMBLY

REFERENCE TO RELATED APPLICATION

[0001] This Patent Application is being filed as a continuation-in-part of patent application Ser. #11/125,093, filed 10 May 2005, currently pending.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates to an interdental brush assembly which is compact and easily to carry and can be manufactured in a low manufacturing cost.

[0004] 2. Description of the Related Art

[0005] People contact with each other frequently in social activities and proper manners and skills are required. It is important to have good oral hygiene which is deemed as a good personal image so that oral hygiene gets more attention for everyone. However, most people have lunches and/or dinners outside so that it is impossible to brush their teeth after every meal. Therefore, dental flosses and interdental brushes are used widely for cleaning teeth, especially for cleaning gaps between teeth. FIG. 1 shows a conventional interdental brush 1 that includes a handle 11 and a brush portion 12 connecting to the handle 11. A cap 13 is used to cover up the brush portion 12 to avoid from being contaminated. The users hold the handle 11 and insert the brush portion 12 into the gaps between teeth so as to remove the food residue from the teeth. However, the conventional interdental brush 1 has a large handle 11 and each interdental brush 1 is equipped with a cap 13 so that the interdental brush 1 becomes too big to carry conveniently. Besides, due to that people have their meals outside so frequently, it needs three interdental brushes 1 for using three times everyday and some people may need to carry more interdental brushes 1 per day. This large number of individual interdental brushes 1 is not convenience for the users to carry. However, if the user just uses the same interdental brush repeatedly, it is not hygienic. Furthermore, for the manufacturers, each interdental brush 1 is cooperated with a cap 13 which needs more cost. Therefore, the whole manufacture step waste much time and relatively creates the cost.

[0006] Furthermore, a conventional interdental brush assembly 4 is disclosed by Japanese Patent No. 02002191438A in FIG. 2, generally includes a plurality of interdental brushes 41 and an interconnected state 42 connecting with each interdental brush 41 and gathering them together. Each interdental brush 41 comprises a handle 411 and a brush portion 412 disposed on the handle 411. After meal, the user tears down one interdental brush 41 and uses it. However, the conventional interdental brush assembly 4 really occupies much space because there is much room among each interdental brush 41. Moreover, due to the size-fixed interconnected state 42, the conventional interdental brush assembly 4 always occupies the same space, no matter how many interdental brushes 41 have been torn down and used. Besides, the interconnected state will remain after using, and the residuum will become a trash. Therefore, it is not convenient to the users.

[0007] The present invention intends to provide an interdental brush that are compact and are connected with each other by a small connection plate so that the users can easily carry.

SUMMARY OF THE INVENTION

[0008] The present invention relates to an interdental brush assembly and comprises a plurality of interdental brushes received in a box and each interdental brush has a handle and a brush portion connecting to the handle. The handles are connected with each other side to side by the connecting plates which can be conveniently torn apart so that the interdental brushes can be picked individually.

[0009] The object of the present invention is to provide an interdental brush assembly that is easily to be manufactured and carried.

[0010] The present invention will become more obvious from the following description when taken in connection with the accompanying drawings which show, for purposes of illustration only, a preferred embodiment in accordance with the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] FIG. 1 shows a conventional interdental brush;

[0012] FIG. 2 shows a conventional interdental brush assembly which is disclosed by Japanese Patent No. 02002191438A;

[0013] FIG. 3 shows the interdental brushes of the present invention connecting with each other;

[0014] FIG. 4 is a cross sectional view to show the interdental brushes of the present invention stored in a box; and

[0015] FIG. 5 shows one of the interdental brushes being separated from the interdental brush assembly.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0016] Referring to FIGS. 3 to 5, the interdental brushes assembly of the present invention comprises a plurality of interdental brushes 2 and each interdental brush 2 has a handle 21 and a brush portion 22 connecting to the handle 21 with a spiral bristle disposed thereon. Each interdental brush 2 forms a flat holding area in the end of the handle 21, and two flat surfaces 212 are formed on two opposite sides of the flat holding area. A plurality of ridges 213 extend from the outer surface of the flat holding area. The ridges 213 are oriented to be perpendicular to a longitudinal axis of the handle 21 so that the user can easily hold the interdental brushes 2.

[0017] The handles 21 are tightly combined side to side by a connecting plate 211 disposed between each two handles 21, and the interval between each two handles 21 equals to the width of each connecting plate 211. Each connection plate 211 has a notch defined in the top edge thereof so that the user can conveniently tear the connection plate 211 apart to pick one of the interdental brushes 2.

[0018] A box 3 is provided to receive the connected interdental brushes 2 and the box 3 is designed to be easily opened so that the user can pick one of the interdental brushes 2 easily. It will be advantageous in conveniently carrying more interdental brushes once. Due to the size of the interdental brushes 2 being small, twenty interdental brushes 2 enable to be put in the box 3 at the same time and

afford the users who need three interdental brushes 2 per day to use for a whole week. The present invention has the following advantages:

[0019] (1) The interdental brushes are connected side by side by the connection plates so that they are well organized in the box and the connected interdental brushes occupy less space and the box allows the user to put it in pockets.

[0020] (2) Each handle of the interdental brushes has a holding area for convenience of grasp, and the connecting plates allow the user to pick the interdental brushes one by one easily. The interdental brushes can be discarded after use. Therefore, they are more hygienic and more convenient while being used.

[0021] (3) The interdental brushes can be produced in mass production by way of plastic injection so that only a low manufacturing cost is involved.

[0022] While we have shown and described the embodiment in accordance with the present invention, it should be

clear to those skilled in the art that further embodiments may be made without departing from the scope of the present invention.

I claim:

1. An interdental brush assembly comprising:

a plurality of interdental brushes, and each interdental brush has a handle and a brush portion connecting to the handle with a spiral bristle disposed thereon; wherein, the handles are tightly combined side to side by a connecting plate disposed between each two handles, and the interval between each two handles equals to the width of each connecting plate.

2. The interdental brush assembly as claimed in claim 1, wherein each interdental brush forms a flat holding area in the end of the handle.

3. The interdental brush assembly as claimed in claim 1, wherein a plurality of ridges extending from the outer surface of said holding area of the handle.

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