United States Patent [19]

Marquis

[11] **3,892,040**

[45] **July 1, 1975**

[54] **TOOTHPICK HOLDER**

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[22] Filed: **Mar. 26, 1973**

[21] Appl. No.: **344,588**

[52] **U.S. Cl.** ..... **32/40 R**

[51] **Int. Cl.** **A61c 3/00**

[58] **Field of Search** 132/90, 91, 92, 93; 32/40, 32/50, 46, 57, 38; 82/368; 403/261–373; 306/375; 172/251; 145/65

[56] **References Cited**

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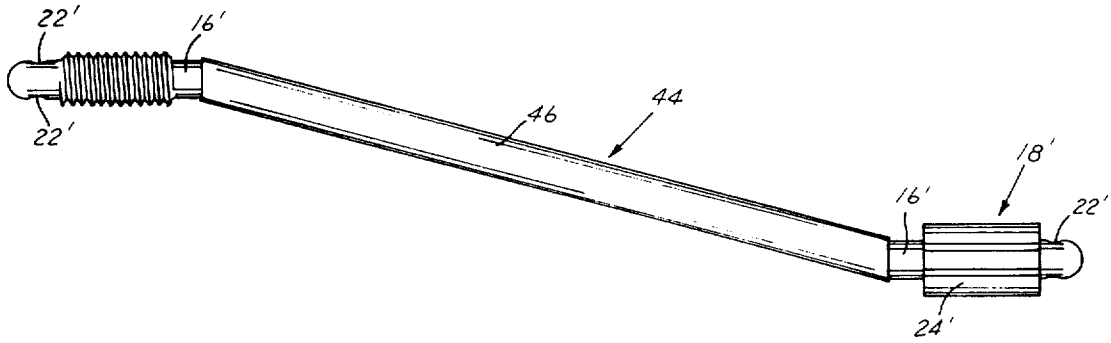
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Primary Examiner—Robert Peshock

[57] **ABSTRACT**

A device for holding a toothpick to facilitate cleaning between the teeth includes a thin elongated handle with an axial extension from at least one end having a transverse passage with converging sides between which a toothpick or the like can be wedged and an axially movable collar adapted to urge the toothpick into wedging engagement with the converging sides. The collar has a raised forward edge which embeds in the toothpick to grip the toothpick and to positively lock it against movement.

5 Claims, 9 Drawing Figures



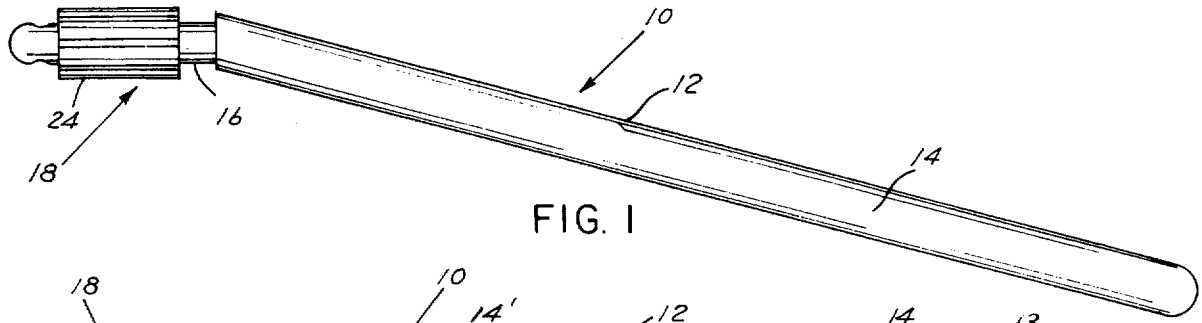


FIG. 1

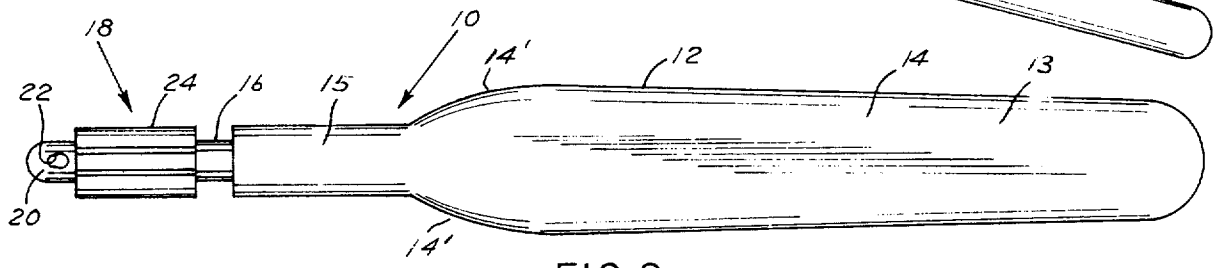


FIG. 2

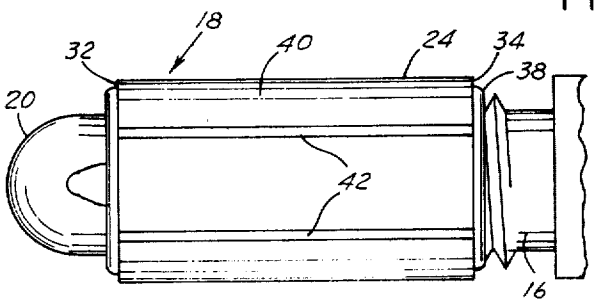


FIG. 3

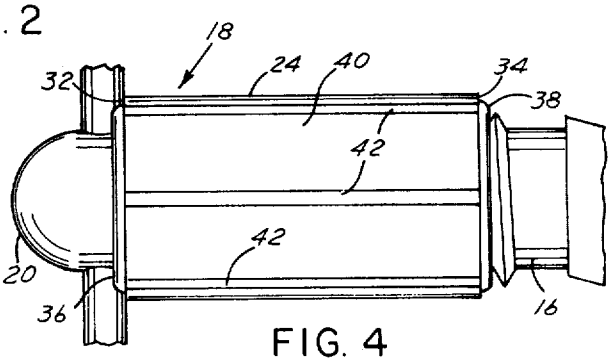


FIG. 4

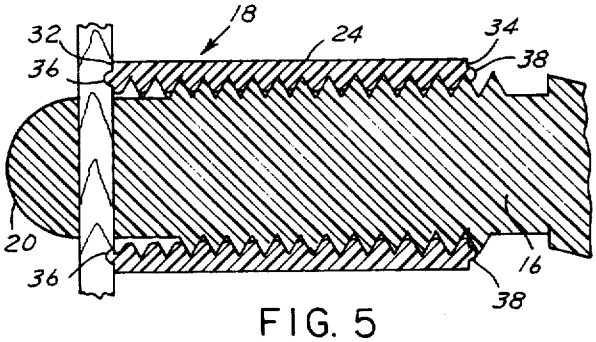


FIG. 5

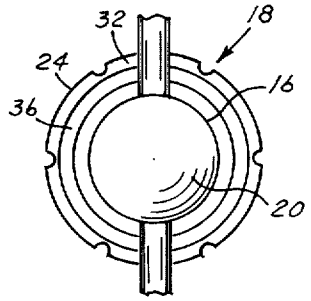


FIG. 6

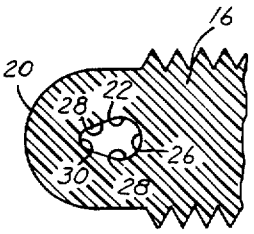


FIG. 7

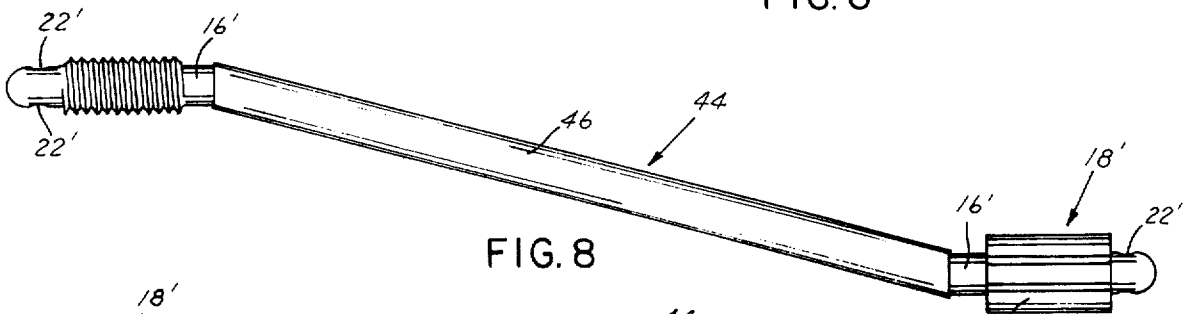


FIG. 8

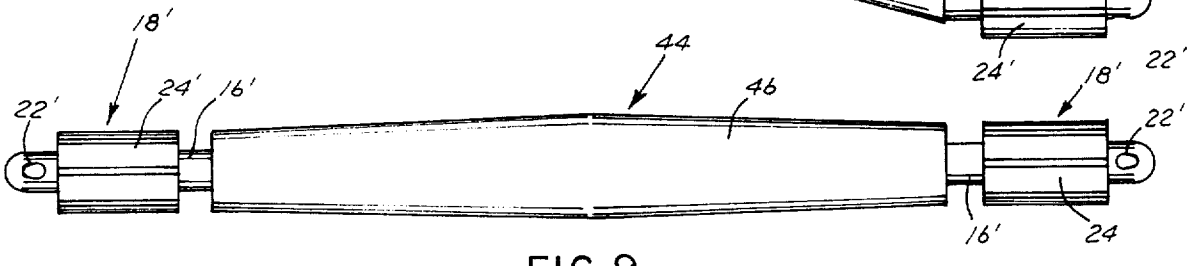


FIG. 9

TOOTHPICK HOLDER

The present invention is generally concerned with dental appliances for oral hygiene and more particularly concerns a new and improved toothpick holder to facilitate cleaning in the interproximal spaces between the teeth.

In recent years the importance of oral hygiene has been increasingly realized and appreciated. Accordingly, numerous devices have been devised for cleaning in the interproximal spaces between the teeth and also in the sulcus surrounding the teeth. In spite of the numerous devices now available for these purposes, the old and commonly used toothpick is probably still the most widely used means for cleaning in the interproximal spaces between the teeth. However, it has always been awkward and difficult to manipulate the toothpick in the mouth. Therefore, implements have evolved for holding a toothpick or other cleaning element in a manner such that it is more convenient to clean between the teeth and easier to manipulate and handle the toothpick.

It is a primary object of the present invention to provide a new and improved dental appliance for positively retaining a toothpick or the like to facilitate cleaning between the teeth.

It is another object of the present invention to provide a dental appliance having improved means for positively but releasably securing a toothpick or the like to the appliance.

It is another object of the present invention to provide a dental appliance including a handle and an extension from one end of the handle with a transverse passage therethrough having converging sides between which a toothpick can be wedged to secure the toothpick to the device.

It is still another object of the present invention to provide a dental device having a handle with an extension from at least one end thereof and wherein said extension has a transverse passage therethrough with a wedge-shaped recess in which a toothpick can be wedged; and further, wherein a collar is movable along the extension with a raised edge adapted to grippingly engage the toothpick while urging it into the recess in such a way as to positively but releasably secure the toothpick to the device.

These and other objects of the present invention are obtained with a dental appliance having a handle with means for retaining a cleaning element, such as a toothpick, by wedging the cleaning element between converging sides of the device and retaining the cleaning element in the wedged condition with releasable gripping means. It will be more fully appreciated from the detailed description hereinafter that the dental appliance of the present invention reliably immobilizes the cleaning element relative to the handle in a positive manner such that the cleaning element can be carefully and accurately manipulated between the mouth to clean particles from between the teeth.

More particularly, the dental appliance of the present invention includes a thin elongated body having a handle with a longitudinal extension from at least one end thereof which has retention means for positively securing a toothpick or similar cleaning element to the body in a manner such that the cleaning element can be easily manipulated within the user's mouth to clean between the teeth. In a preferred embodiment, the retention means on the longitudinal extension includes a passage extending transversely through the extension portion having converging sides defining a recess within which the toothpick or other cleaning element can be wedged and thereby retained in a position substantially perpendicular to the handle. To retain the cleaning element between the converging sides and otherwise positively secure it to the body, a collar is disposed on the extension for selected longitudinal movement against the cleaning element to wedge the cleaning element between the converging sides and positively retain the cleaning element in position relative to the body. The collar is adapted to positively grip the cleaning element and thereby more reliably anchor it to the body by use of a raised edge which embeds in the cleaning elements thereby to grip the element and prevent relative movement between the element and the body when the element is forced into the interproximal spaces between the teeth.

Other objects, advantages and capabilities of the present invention will become more apparent as the description proceeds taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a side elevation of a preferred embodiment of the dental device of the present invention.

FIG. 2 is a top plan view of the dental device of FIG. 1.

FIG. 3 is an enlarged fragmentary top plan view of the forward end of the dental device as shown in FIG. 2 with a toothpick retained therein.

FIG. 4 is an enlarged fragmentary side elevation of the forward end of the dental device as shown in FIG. 1 with a toothpick retained therein.

FIG. 5 is a fragmentary vertical section through the forward end of the dental device as seen in FIG. 4.

FIG. 6 is an enlarged front end view of the dental device as shown in FIG. 1.

FIG. 7 is an enlarged fragmentary top plan view of the forward end of the dental device as shwon in FIG. 2 with the gripping collar removed.

FIG. 8 is a side elevation of a second embodiment of the dental device of the present invention with parts removed for clarity; and

FIG. 9 is a top plan view of the dental device of FIG. 8.

Referring first to FIGS. 1 and 2, the dental device or toothpick holder 10 of the present invention can be seen to comprise a thin elongated body 12 having a flattened handle 13 of substantially rectangular transverse cross-section with a relatively wide rearward, hand-engaging portion 14 having forwardly convergent curved sides 14' terminating in a forward portion 15 of reduced size. An externally threaded forward cylindrical extension 16 protrudes from the forward portion 15 of the handle 13 so as to form an obtuse angle with the handle and is of reduced size with respect to the portion 15. The forward extension 16 is provided with retention means 18 for positively securing a cleaning element, such as, a toothpick, to the device, and the forward end 20 of the extension is hemispherical or rounded in configuration so as not to irritate or otherwise cause damage within the mouth when the holder is being used.

The retention means 18 includes a passage 22 passing radially or transversely through the extension 16 adjacent the hemispherical forward end 20 thereof and a gripping collar 24 axially movable along the extension. The passage 22, which is best shown in FIG. 7, is seen

to be generally pear-shaped in transverse cross-section with a rearward semi-cylindrical portion **26** and relatively flat forwardly convergent sides **28** extending from opposite sides of the semi-cylindrical rearward portion **26** to opposite sides of a relatively small diameter forward semi-cylindrical portion **30.** The forwardly convergent sides **28** and the forward semi-cylindrical portion **30** deine a substantially wedge-shaped recess in the passage **22** in which a toothpick T or other similar cleaning element can be wedged. The rearward semi-cylindrical portion **26** of the passage is dimensioned so as to slidably receive a conventional toothpick or similarly sized cleaning element so that it extends normally away from the extension, and the forwardly converging sides **28** which reduce the width of the passage **22** serve to grip the toothpick T when it is urged forwardly from the rearward semi-cylindrical portion.

The gripping collar **24** comprises a cylindrical element with internal threads adapted to mate with the external threads on the forward extension **16** as seen in FIG. **5.** The gripping collar **24** is thereby selectively movable axially along the forward extension **16** and serves to urge the toothpick T forwardly in the passage **22** so that it becomes wedged between the forwardly convergent sides **28** and is held in this position. To more positively grip the toothpick, the forward and rearward edges **32** and **34** respectively of the collar have raised circular bead-like protrusions **36** and **38** respectively of semi-circular transverse cross-section which are individually adapted to be embedded in the softer toothpick T when the collar is advanced forwardly pressing the toothpick between the forwardly convergent sides **28.** It can, therefore, be appreciated that the toothpick is immobilized relative to the body **12** of the holder **10** both by the forwardly convergent sides **28** of the passage **22** between which it is wedged and the gripping collar **24** which is not only embedded in the toothpick in the wedge-shaped recess in the passage. As is best seen in FIGS. **3, 4** and **6,** the outer cylindrical surface **40** of the gripping collar **24** is provided with circumferentially spaced axially extending grooves **42** so that it is easily gripped with the fingers as it is advanced against or moved away from a toothpick T, in the passage **22.**

Of course, when it is desirable to replace a used toothpick with an unused toothpick, the collar **24** is merely rotated to move rearwardly along the extension **16** thereby releasing the toothpick T from the grip of the collar and allowing it to be moved rearwardly in the passage **22** into the rearward semi-cylindrical portion **28** thereof wherefrom it can be easily slid out of the passage. The raised bead-like protrusion **38** on the rear edge **34** of the collar is merely provided so that the collar can be positioned on the forward extension **16** in either direction and still be adapted to be embedded in the toothpick to positively grip the toothpick. The angular relationship of the forward extension **16** with the handle **14** of the holder has been found to facilitate desired positioning of the toothpick within the mouth for best removal of particles located in the interproximal spaces between the teeth.

A second embodiment **44** of the dental device or toothpick holder of the present invention is shown in FIGS. **8** and **9** to be similar to the first described embodiment with like parts having been given like reference numerals. In the second embodiment, reduced cylindrical externally threaded extensions **16'** are provided at both ends of an intermediate flattened handle **46** and each extension **16'** is provided with retention means **18'** indentical to the retention means **18** utilized on the first described embodiment. In other words, a transverse passage **22'** of generally pear-shpaed transverse cross-section is provided through each extension **16'** and a gripping collar **24'** is threadingly received on the associated extension **16'** to urge a toothpick or other cleaning element into the wedge-shaped recess of the passage **22'** so that it is wedged therein and gripped by the collar in a positive manner. Both extensions **16'** form an obtuse angle with the handle **46** of the device and are adapted to releasably retain a toothpick or other similar cleaning element in a manner such that it extends normally away from the extension so that the element can be conveniently and desirably positioned and manipulated within the mouth to remove food particles and the like from between the teeth. Of course, when using the embodiment of FIGS. **8** and **9,** a toothpick would not have to be exchanged each time it became unsuitable for use since the opposite end of the device would be carrying an unused toothpick and could alternately be inserted into the mouth.

Although the present invention has been described with a certain degree of particularity, it is understood that the present disclosure has been made by way of example and that changes in details of structure may be made without departing from the spirit thereof.

What is claimed is:

1. A dental appliance for releasably holding a toothpick and the like for cleaning between the teeth, said dental appliance comprising:

an elongated body having a handle portion and a solid, generally cylindrical forward extension adjacent to one end of the body, said forward extension including a transverse passage therein, said passage being wedge-shaped in cross-section and tapering outwardly away from said handle, and

gripping collar means including a raised annular edge for wedging a toothpick in the wedge-shaped passage, said gripping collar means being threaded on said forward extension for threaded advancement of said raised annular edge against the toothpick to urge the toothpick into the outwardly tapering portion of said passage whereby the toothpick is positively held in said passage by the raised annular edge of said gripping collar means and the toothpick can be inserted into the mouth for cleaning between the teeth.

2. A dental appliance according to claim **1,** said elongated body having a forward extension at the opposite end of said body identical to the forward extension adjacent to the one end of said body, and gripping collar means threaded on said forward extension at the opposite end of said body identical to said gripping collar means threaded on said forward extension at the one end of said body.

3. The dental device of claim **1** wherein the transverse cross-sectional configuration of said wedge-shaped passage is generally pear-shaped having convergent side portions, a first substantially semi-circular portion and a second smaller semi-circular portion at opposite ends of said convergent side portions.

4. The dental device of claim **3** wherein said convergent side portions converge forwardly toward said one end of the body.

5. A dental device for releasably holding a toothpick for cleaning between the teeth comprising:

an elongated body having a handle portion and a cylindrical reduced forward extension from one end of said handle portion forming an obtuse angle therewith, retention means on said cylindrical extension comprising a radial passage through said cylindrical extension and a gripping collar threadedly received on said extension for selective axial movement therealong, said passage having a generally pear-shaped transverse cross-section with a substantially semi-circular portion and forwardly convergent substantially flat sides terminating at a smaller substantially semi-circular portion, said gripping collar being of generally cylindrical configuration and having a raised annular edge at its forward end whereby said toothpick can be positively retained between said forwardly convergent sides of said passage by said gripping collar which is advanced forwardly along said cylindrical extension to wedge said toothpick between the forwardly convergent sides and grip said toothpick with the raised annular edge on the forward end thereof.

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