

[54] **TOOTHPICK DEVICE**

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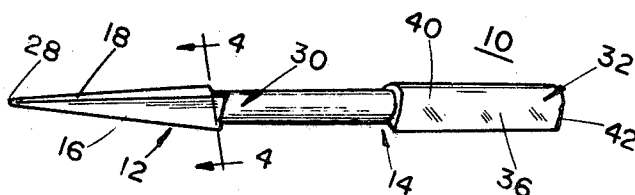
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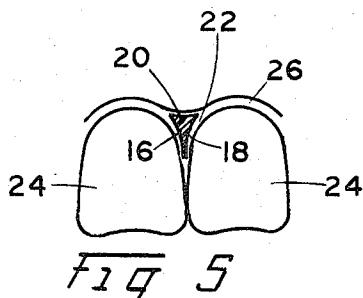
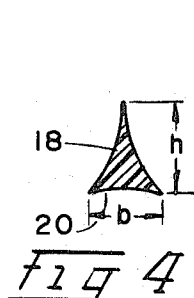
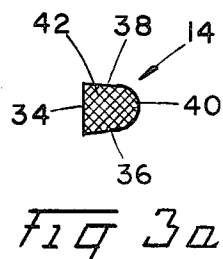
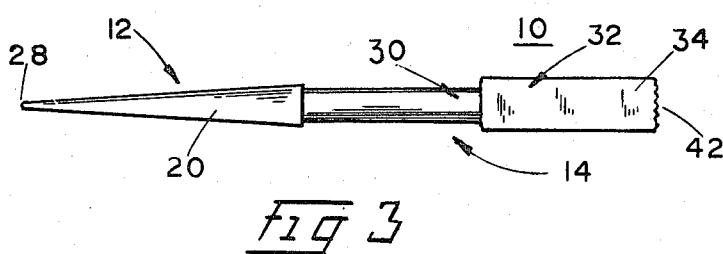
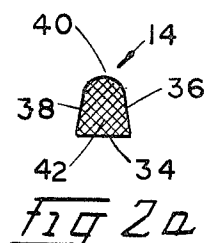
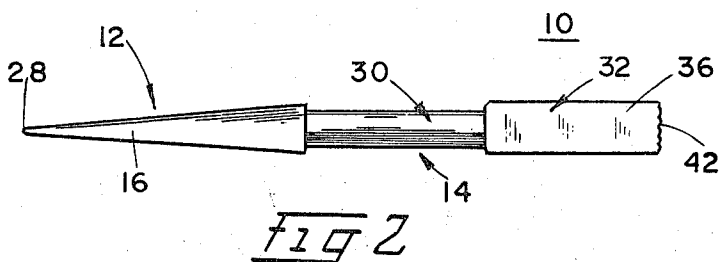
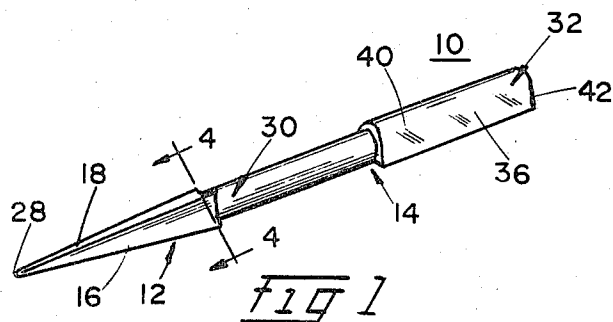
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[57] **ABSTRACT**

A molded plastic toothpick device includes a picking end having a triangular cross-section with two of the legs of the triangle being equal in length. The two walls of the picking end are concave and curved complementary to the shape of the teeth for easy insertion into the spaces therebetween. The picking end is tapered to a blunt free end. A handle formed integrally with the picking end includes a first cylindrical portion for rotating the device in the fingers to correctly insert the device in spaces between both the upper and lower teeth. An end portion of the handle has three flat walls and a curved wall to insure a stable grip on the device once the picking end has been inserted between the teeth and for good maneuverability. The end surface of the handle portion is roughened to provide an abrasive for removal of minor stains from the surface of the teeth. The toothpick device may be impregnated with a pleasant tasting substance during the molding process if desired.

6 Claims, 7 Drawing Figures





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TOOTHPICK DEVICE

BACKGROUND

This invention relates to toothpick devices for use in freeing food and the like particles from interdental spaces in the human mouth.

It is important when using a toothpick device for freeing food particles lodged between the teeth, that the toothpick passes easily therebetween without injuring the gingival tissue. Furthermore, the toothpick device should be easily maneuverable in the fingers of the user so that it can be positioned for effective use in the mouth. In addition, the toothpick device should be safe, in that it should not splinter or break easily to cause injury in the mouth of the user.

Many toothpick devices are known and are presently in use, but each has certain drawbacks which tends to lessen the effectiveness thereof.

SUMMARY

Accordingly, it is a general object of the present invention to provide a new and improved toothpick device.

It is a more specific object of the invention to provide a toothpick device which includes the desirable features described heretofore.

It is another object of the present invention to provide a toothpick device of the last described type which is compact and relatively inexpensive to produce.

Briefly, a preferred embodiment of the toothpick device according to the invention is molded of a resilient, easily bendable or pliable material, such as, for example, polypropylene, nylon, hard rubber or the like and includes a picking end having a triangular cross-section with at least two of the legs of the triangle being substantially equal in length. The two walls of the picking end are concave and are curved so as to be generally complementary to the shape of the teeth, for easy passage of the picking end between adjacent teeth. The third wall of the picking end is also concave and is curved to accommodate the gum tissue. The picking end is tapered to a relatively blunt end which will not injure the gums in the event the user touches the latter during the insertion of the toothpick device into the mouth.

A handle connected to the picking end includes a substantially cylindrically shaped portion formed directly adjacent the picking end, which enables one to rotate the toothpick device between the fingers to easily manipulate the device for insertion in the interdental spaces of both the upper and lower teeth. An end portion of the handle connected to the cylindrical portion is generally rectangular in cross section, having a flat base wall and flat side walls tapering slightly toward a curved top wall. The flat wall surfaces enable one gripping the end portion to hold the toothpick device in a stable, fixed position when the picking end has been inserted between the teeth to avoid any undesirable rotation of the picking end at this time. The curved top wall, however, provides a sufficient surface for one to roll the toothpick slightly to maneuver the device in the spaces between the teeth and in the mouth generally.

The extreme end surface of the handle of a preferred embodiment of the toothpick device according to the invention is roughened or made abrasive. The end surface is for use against the surface of the teeth to remove minor stains, etc., which may form thereon. The toothpick device may also be impregnated with a flavored substance to make the toothpick pleasant tasting to the user.

DESCRIPTION OF THE DRAWING

A better understanding of the present invention and its organization and construction may be had by referring to the description below in conjunction with the accompanying drawing, wherein:

FIG. 1 is a perspective view of a toothpick device according to the invention;

FIG. 2 is a side view of the toothpick device of FIG. 1;

FIG. 2a is an end view of the toothpick device of FIG. 2;

FIG. 3 is a bottom view of the toothpick device of FIG. 1; FIG. 3a is an end view of the toothpick device of FIG. 3; FIG. 4 is a cross-sectional view of the toothpick device of FIG. 1 taken along the line 4—4 thereof; and FIG. 5 is a front view of two adjacent teeth illustrating the insertion of a toothpick device according to the invention into the space therebetween.

DETAILED DESCRIPTION

Referring now to the drawing in greater detail, FIGS. 1-3 illustrate a preferred embodiment 10 of a toothpick device according to the invention. The toothpick device includes a picking end 12 and a handle 14 connected to and formed integrally therewith. The toothpick device 10 is preferably molded of a plastic material, such as, for example, polypropylene which is durable, pliable and will not readily splinter or break. The device can likewise be formed of nylon, hard rubber or the like material.

The picking end 12 of the toothpick device 10 has a triangular cross-section, (see FIG. 4) with at least two of the walls 16, 18 thereof being substantially equal in length. The third wall 20 is shorter in length than the other side walls 16, 18. The walls of the picking end are concave and the longer walls 16, 18 are curved generally complementary to the curvature of a tooth 24 for easy entry of the picking end 12 into the spaces, such as 22 (FIG. 5) between adjacent teeth 24. The curvature of the shorter wall 20 of picking end 12 accommodates the gingival or gum tissue 26 without injuring the latter while the picking end is inserted in the interdental spaces. The picking end is tapered to form a relatively blunt free end 28. The blunt end 28 aids in preventing injury to the gingival tissue upon insertion of the picking end between the teeth during usage of the toothpick device.

Handle 14 of the toothpick device includes a first generally rounded or cylindrical portion 30 attached to and formed integrally with picking end 12. Portion 30 forms a central section of the toothpick device 10. The cylindrical portion 30 of handle 14 enables one using toothpick device 10 to rotate the latter easily in the fingers, thereby to position the device correctly before insertion of the tapered picking end between the teeth. Thus, the device 10 is easily changed from usage in the spaces between the lower teeth to the spaces between the upper teeth and vice versa.

A second or end portion 32 of handle 14 is attached to and formed integrally with cylindrical portion 30. The end portion 32 has a generally rectangular cross-section (see FIGS. 2a, 3a) and includes a flat bottom wall 34 (FIG. 3) and flat side walls 36, 38 (FIGS. 2a, 3a) tapering gradually toward and joined by a curved or rounded top wall 40. The flat wall surfaces enable one to hold the toothpick device steadily between the fingers while probing between the teeth with the picking end. The curved top surface enables one to gently roll or rotate the toothpick device from side-to-side, thereby to maneuver the picking end in the mouth to enable one to reach substantially all crevices, etc., between and around the teeth, while maintaining a sure grip on the handle so as not to inadvertently injure the gum or other fleshy tissue in the mouth. One way of using the toothpick device as described is for the user to place his index finger on the curved surface 40 of the handle portion 32 with the thumb along the flat lower surface 34. The user then can manipulate the handle portion 32 in a gentle rolling fashion while still maintaining a firm hold on the handle. Likewise, the side walls 36, 38 may be gripped between the thumb and index finger when more limited or no rolling or twisting action is required.

In the preferred embodiment 10 of the toothpick device illustrated in the drawing, the extreme end 42 of the handle 14 is formed to be roughened or abrasive in texture. End 42 may be placed against a stained tooth and rubbed thereon to aid in removing stains therefrom. Because the material from which the toothpick is formed is relatively pliable, no damage to the tooth enamel occurs. The roughened surface, however, provides a sufficient abrasive action to remove minor stains from the teeth.

In addition to the above, the toothpick device of the invention can be impregnated with a flavored substance during the molding process. The latter provides the user with a pleasant taste in his mouth when using the toothpick device.

Dimensionally, the toothpick device of the invention is approximately $2\frac{1}{4}$ to $2\frac{1}{2}$ inches in length, with the picking end being approximately 1 inch in length and the handle portions 30, 32 each being between five-eighths and three-fourths inches long. The height "h" (FIG. 4) of the triangular cross-section of the picking end 12 of the toothpick device is approximately five thirty-seconds to three-sixteenths inches at the greatest point, directly adjacent central section 30 of the device. The base dimension or length "b" is slightly less than the height; i.e. three thirty-seconds to one-eighth inches.

In use, the toothpick device is easily manipulated, firstly to insert the tapered picking end into the interdental spaces, as shown in FIG. 5, of both the upper and lower teeth in the mouth, and secondly after the picking end has been inserted thereinto. Furthermore, because the walls of the picking end are curved generally complementary to the curvature of the teeth, the picking end is easily received in the interdental spaces and serves well to free particles of food and the like lodged therein. In addition, because of the integral molding of the device from a relatively pliable material, no fear of splintering or breaking the picking end off in the mouth need be present.

The toothpick device is compact and relatively inexpensive to manufacture, and is easily stored in a pocket or purse when not in use.

While a particular embodiment of the invention has been shown and described, it should be understood that the invention is not limited thereto since many modifications may be made. It is therefore contemplated to cover by the present application any and all such modifications as fall within the true spirit and scope of the appended claims.

I claim:

1. A toothpick device for removing food particles and the like from between adjacent teeth, said toothpick device including in combination; a picking end and a handle connected thereto, said picking end having a triangular cross-section with at least two of the walls of the triangle being concave and curved generally complementary to the curvature of said teeth, said two walls being substantially equal in length with the third wall of said triangle being shorter, and said picking end being tapered along the body thereof to a generally blunt free end for easy entry between said teeth without injury to the gum and said handle including first and second portions, said first portion being cylindrically shaped for easy rotation about its longitudinal axis in the fingers of a user to rotate said picking end to a first position for insertion of the free end thereof into the interdental spaces of the upper teeth and to a second position rotated substantially 180° about said axis for

insertion into the interdental spaces of the lower teeth and the second portion having a generally rectangular cross-section with flat side wall surfaces extending generally parallel to the longitudinal axis of said cylindrically shaped portion for holding the toothpick device securely between the fingers subsequent to the insertion of the free end of the picking end between the teeth while probing therebetween.

2. A toothpick device as claimed in claim 1 wherein the end surface of said handle is roughened to provide an abrasive surface for rubbing against the surface of the teeth to remove stains therefrom.

3. A toothpick device as claimed in claim 1 wherein said picking end and handle are integrally formed of a resilient, relatively pliable material.

4. A toothpick device as claimed in claim 3 wherein said material is polypropylene.

5. A toothpick device as claimed in claim 1 wherein said first handle portion is attached to and formed integrally with said picking end and said second handle portion is formed integrally with said first handle portion and wherein said second handle portion further includes a curved top wall connecting said flat side walls, said curved top wall permitting a gentle rolling action of said toothpick device in the fingers of a user subsequent to the insertion of the picking end between said teeth.

6. A toothpick device for removing food particles and the like from interdental spaces in the human mouth, said device comprising, in combination; an integrally formed plastic picking end and handle, said picking end having a triangular cross-section with two of the walls of the triangle being substantially equal in length, said last-mentioned walls being concave and curved generally complementary to the curvature of the teeth adjacent said interdental spaces, said picking end being tapered along the body toward the free end thereof for easy entry into said interdental spaces, the third wall of said triangle being shorter than said first-mentioned two walls and being slightly concave to accommodate gum tissue adjacent said interdental spaces without injury thereto, said handle including first and second portions, said first portion being adjacent said picking end and being cylindrically shaped for easy rotation about its longitudinal axis in the fingers of the user to rotate the picking end to a first position for insertion of the free end thereof into said interdental spaces of the upper teeth and to a second position rotated substantially 180° about said axis for insertion into said interdental spaces of the lower teeth and a second portion integrally formed with and at the free end of said cylindrically shaped portion and having relatively flat side surfaces extending parallel to the longitudinal axis of said cylindrically shaped portion for gripping the device in the fingers of a user subsequent to the insertion of the free end of the picking end into said interdental spaces.

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