March 31, 1970 S. KASDIN ET AL 3,503,127

DENTURE WITH A RECEPTACLE THEREIN

Filed Dec. 24, 1968

FIG. 1

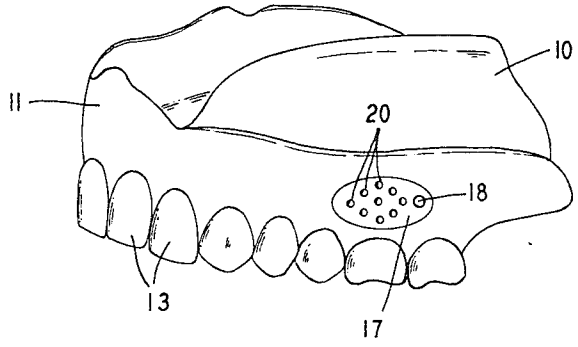
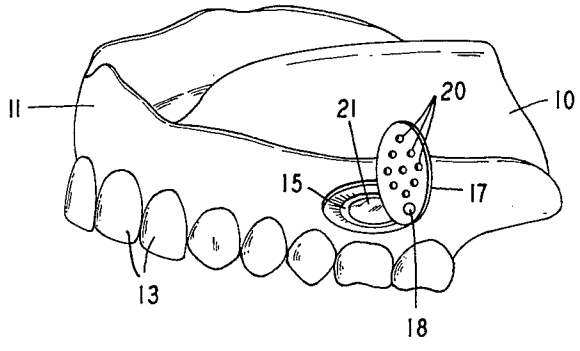


FIG. 2



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DENTURE WITH A RECEPTACLE THEREIN

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ABSTRACT OF THE DISCLOSURE

A denture has a small cup implanted in the buckle flange above the teeth on each side. The cup, which is to be filled with a pill or concentrate of a sweetened chemical, such as oil of cinnamon, has a cap pivoted to close over the cup. The cap is apertured so that saliva can flow through it to dissolve the pill slowly.

BACKGROUND OF THE INVENTION

People who wear dentures are frequently plagued with an odorous breath. Bad breath is often a stomach, rather than a mouth, problem, but occurs most frequently with elderly people. These people are also more likely to be wearing dentures.

In the past a number of palliatives have been tried, such as flavored gum and lozenges. While these are temporarily effective, the time span of their efficiency is very short.

SUMMARY OF THE INVENTION

We have discovered that a small cup may be formed in a denture and placed above the posterior teeth in the buckle flange on each side without interfering with the normal use of the denture and without any inconvenience to the wearer of the denture.

A pill or other mixture of a sweet smelling solution can then be placed in this cup. A cap is hinged to fit over the cup and hold the pill in place. The cap is apertured so that saliva can seep through the cap to dissolve the pill slowly. By controlling the size and number of the apertures we can determine the rapidity with which the pill is dissolved.

In accordance with our invention, therefore, a chemical retained in the mouth to prevent bad breath can be effective over a far longer period than priorly possible.

THE DRAWING

FIG. 1 is a perspective view of a denture incorporating our invention and illustrative of one specific exemplary embodiment of our invention; and

FIG. 2 is a view similar to FIG. 1 but wherein the cap over the cup, in accordance with our invention, has been moved to the open position.

DETAILED DESCRIPTION

Turning now to the drawing, FIGS. 1 and 2 depict our invention incorporated in a full upper denture. It is to be understood, however, that our invention may equally be utilized with lower dentures or with partial upper or lower dentures.

An upper denture, as is known in the art, includes a palate section **10** that rests against the roof of the wearer's mouth, and a flange portion **11** which can be considered as comprising an anterior or front flange, the posterior or back flanges, and the buckle flange on the sides between the anterior and posterior flanges. These portions of the denture may be made of acrylic or other suitable material known in the art.

The false teeth **13** are formed with or embedded in the flange **11** and may be also made of acrylic or porcelain,

as is known in the art. As is known, the shape, coloring, and size of the teeth are individual to the wearer. Similarly, the exact contour of the flange, whether it is thick or thin, and its shape will be individual to the wearer.

In accordance with our invention, a small cup **15**, best seen in FIG. 2, is embedded into each buckle flange. If the flange is thick enough we have found the cup may readily be placed in the flange as contoured without concern for the cup. However, if the flange is thin, we have found the flange can be built up slightly adjacent the cup **15** to accommodate it.

The cup **15** may be of any material suitable for use within a person's mouth; we have found the cup **15** to be readily formed of a stainless steel. The cup should be large enough to hold a sufficient amount of sweetening material as in a pill **21**, and yet not too large to be noticeable to the wearer of the denture. We have found a cup of approximately 4 to 5 mm. in depth, 6 mm. wide, and 12 mm. long to be of an advantageous size. The cup may also be slightly oblong shaped and the pill **21** positioned in it by the user may be similarly shaped.

In FIG. 1 the cap member **17** is shown in the closed position; in this position the cap member **17** is perfectly flush with the surface of the flange **11** so as not to be noticeable to the wearer of the denture. We have found it particularly important that the cup, in accordance with our invention, have no portion protruding or rising above the surface of the flange **11**.

At one end of the cap **17**, as seen in both FIGS. 1 and 2, there is a rivet or hinge post **18** around which the cap **17** can pivot or swivel. When in the closed position, as in FIG. 1, the cap **17** rests onto the side wall of the cup **15**. If desired, the cup **15** may be slightly smaller than the cap **17** so that the width of the seating area may include a portion of the flange material itself.

When the denture has been removed from the wearer's mouth, the wearer can be putting pressure down on the cap **17**, cause it to slide out of the cup **15** and, pivoting around the hinge post **18**, to slide over the surface of the flange **11**. After the cap has been slid open, as shown in FIG. 2, the wearer may then place into the cup the pill **21**, before sliding the cap **17** back into the cup **15** preparatory to returning the denture to his mouth.

As noted above, the cap **17** must be so shaped as to seat into the cup **15** without, when in the closed position depicted in FIG. 1, presenting any edge that might be an irritant to the gum or tongue of the user. The cap **17** may also be of stainless steel and about ½ mm. thick.

In accordance with an aspect of our invention, the cap **17** has a plurality of apertures **20** therein; these apertures allow passage of the saliva normally present between the cheek and gum of a person into contact with the pill **21** or other material positioned within the cup **15**. The size of the apertures **20** and their number will be in part dependent upon the exact chemicals and form of the sweetening material in the cup **15**. Sufficient apertures **20** are provided so that a constant flow of saliva, sweetened by the essence of the pill **21**, occurs in the mouth, thereby masking any poor odors that might otherwise be present in the mouth.

Various concentrates and chemicals known in the art could be utilized in the pill **21** or other suspension form to be placed in the cup **15**, in accordance with our invention. Thus a hard sugar suspension of an oil of peppermint or oil of cinnamon could be employed. Artificial or natural sweeteners, or both, can be used to overcome the bitterness of the oil itself and to obtain a sweetened pill. Similarly, these oils could be blended with a suitable carrier oil, such as peanut oil, and hydrogenated to give a melting point suitable for the temperature of the mouth, such as of the order of 110° F. We appreciate that the additional saliva, and possible heat, occurring when a

person eats would probably increase the removal of the chemical from the cup at these times. Accordingly, the size of the pill or other suspension and the size of the apertures should be such as to allow the pill to be effective over a normal period between meals, such as five to six hours. Any chemical remaining in the cup at the end of this period when the wearer eats his next meal will be quickly removed. This has the additional advantage of preventing the flavoring of the chemical from interfering with the taste of the food being eaten. Obviously, after the meal the wearer would place another pill into the cup or cups **15** in his denture.

While a specific illustrative embodiment of our invention has been depicted and described, it is to be understood that it is merely illustrative of the application of the principles of our invention and that various modifications and other arrangements may be devised without departing from the spirit and the scope of our invention.

We claim:

1. In a denture having a flange and a plurality of false teeth supported thereby the improvement comprising cup means defining a cavity to hold a water soluble concentrate, said cup means being located in said flange with the open end of said cup means facing and communicating with the mouth of the wearer of the denture, and an apertured cover extending over said open end of said cup means and hinged to swivel over said cup means, whereby saliva can flow through said apertured cover to dissolve said concentrate at a slow rate.

2. In a denture, the improvement according to claim **1** wherein said cap seats into said cup means so as to be flush with the surface of said flange.

3. In a denture, the improvement according to claim **2** wherein said cup means is located in the buckle flange adjacent the posterior teeth and facing the cheek of the wearer of the denture.

4. In a denture, the improvement according to claim **3** wherein a second cup means is located in the buckle flange adjacent the other posterior teeth of the denture.

5. In a denture, the improvement according to claim **2** further comprising a water soluble concentrate positioned in said cup means.

6. In a denture, the improvement according to claim **5** wherein said cup means is oblong and said concentrate comprises a pill of the same shape as said cup means.

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ROBERT PESHOCK, Primary Examiner