

[54] DENTURE CLEANSING SYSTEM

[75] Inventor: Jacob A. Saffir, Los Angeles, Calif.

[73] Assignee: Dentsply Research & Development Corp., Milford, Del.

[22] Filed: June 9, 1972

[21] Appl. No.: 263,747

2,060,238 11/1936 Nilson..... 150/3
2,978,769 4/1961 Harrah..... 150/3

Primary Examiner—Morris O. Wolk
Assistant Examiner—Dale Lovercheck
Attorney, Agent, or Firm—C. Hercus Just

[52] U.S. Cl. 134/137, 53/21 R, 53/21 FC,
53/36, 53/37, 134/34, 150/1, 150/3, 206/37
R, 206/63.5

[51] Int. Cl. B08b 3/04

[58] Field of Search..... 134/34; 53/21 R, 21 FC,
53/36, 37; 206/63.5, 37 R; 150/1, 3

[56] References Cited

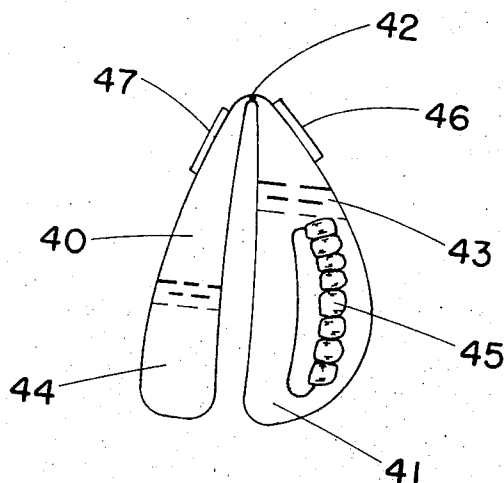
UNITED STATES PATENTS

3,036,616 5/1962 Allen..... 150/3 UX

[57] ABSTRACT

Flexible sterile pouch means of small size to contain dentures and liquid cleaning solution in water-tight manner. The cleaning material may be contained in dry condition in the pouch until liquid is added at the time of use. An additional pouch for rinsing solution may also be associated with the cleaning pouch.

3 Claims, 9 Drawing Figures



SHEET 1 OF 2

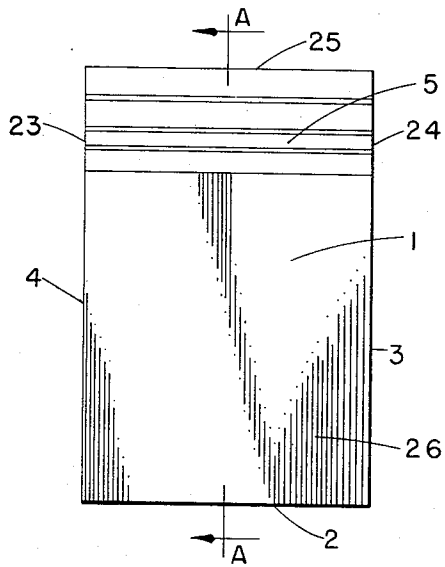


FIG. 1

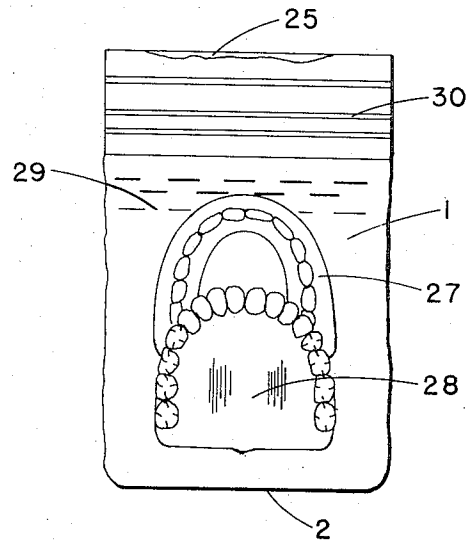


FIG. 5

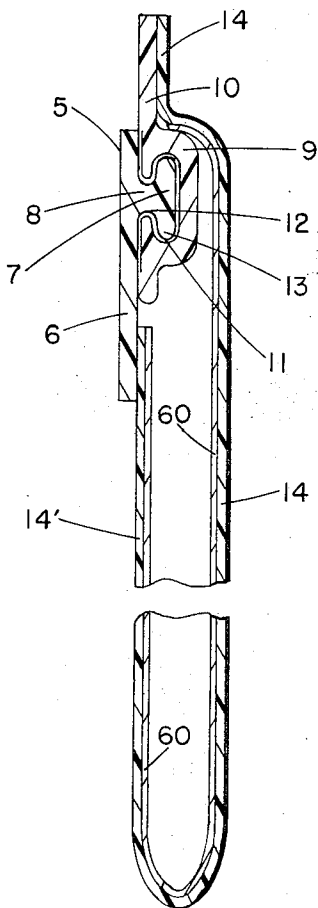


FIG. 2

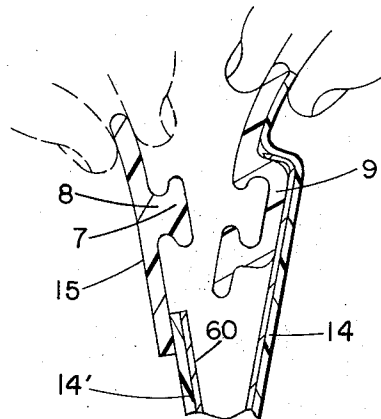


FIG. 3

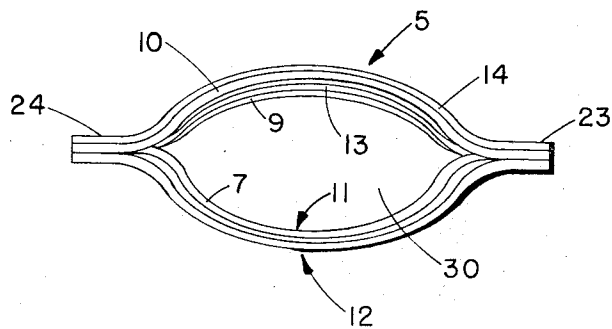


FIG. 4

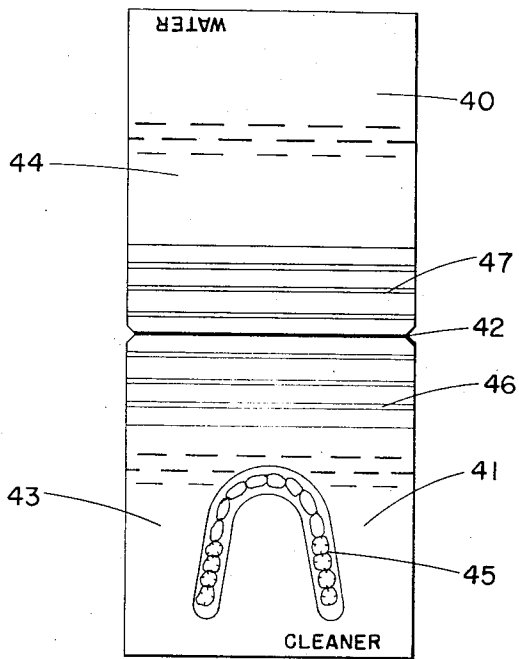


FIG. 6

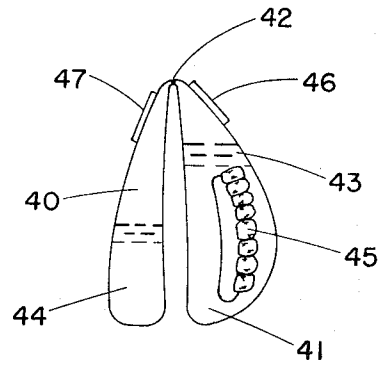


FIG. 7

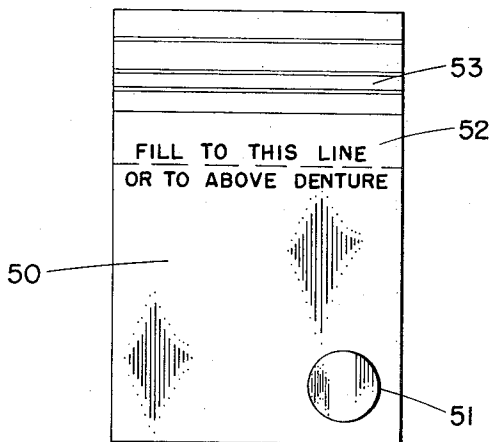


FIG. 8

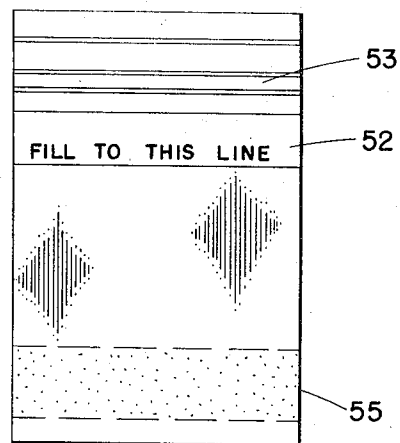


FIG. 9

DENTURE CLEANSING SYSTEM

BACKGROUND OF THE INVENTION

At present, dentures are cleaned by being placed in a drinking glass, a bathroom plastic tumbler, or sometimes in a specially designed denture cup, generally box shaped, and of opaque plastic, to which a denture cleanser is added.

These present means are mainly for home use since they take up considerable shelf space and are conspicuous. The glass or the denture cup is set aside to be used over and over again to hold the soiled dentures for cleansing. After a while, almost regardless of the exercise of care, such receptacles develop an offensive "denture odor."

It is also generally known that not all bacteria are killed by short or even the long term cleansing solution. Since dentures are most often worn by older people whose known resistance to cold germs and other infectious bacteria is somewhat lessened, reinfection from a germ laden denture cup is not uncommon.

Mucus and scum form in denture cups and neither these nor bathroom glasses normally are sterilized in the ordinary home. Such deposits contribute to causing the offensive "denture odor" so common in denture wearers.

In general, the object of the present invention is to provide a simple, clean, surgically sterile pouch and contents in which to cleanse and sterilize a denture.

SUMMARY OF THE INVENTION

It is the principal object of the invention to provide a moisture-proof pouch of convenient size for home use and also adapted to be carried in a clothing pocket, handbag, or the like, whereby a denture or set of dentures may be cleansed in a cleaning solution within the pouch in a short interval of time. Soluble cleaning material may be contained within the pouch prior to, or added thereto at the time liquid is added, at the time of use.

It is another object to provide a pouch or receptacle which is small and compact so as to be inconspicuous to handle and small enough that several may be carried in a man's pocket or in a woman's purse, or be dispensed from a public vending machine located in a washroom or lounge where personal convenience and the necessary hygiene can be carried out.

Another object is to provide a transparent flexible pouch or receptacle which permits visual observation of all areas of a denture to check cleaning effectiveness before removal.

A further object is to provide a pouch with closure means that render it water and air tight so that its contents, with or without a denture, can be maintained leak-proof in any position and under any circumstances.

Still further is the object to provide a receptacle which can be shaken and agitated to assist in dislodging plaque and the like from the dentures, without the risk of the solution leaking from the receptacle.

Another object of this invention is to provide a hygienically clean denture pouch which primarily is intended for only a single use and the package is inexpensive enough to permit it to be discarded economically after it has served its purpose.

Another object of this invention is to provide a sterile receptacle initially containing soluble solid denture

cleanser material into which a denture can be placed for cleaning after water is added to form the cleaning solution.

Still another object is to provide a sterile pouch initially containing liquid denture cleaner material, such receptacle being of a size and form small enough to be carried in a man's pocket or a woman's purse for convenient and instant use without requiring retirement to the privacy of a washroom since it is possible for a denture to be removed while screened behind a dinner napkin, inserted into the pouch while on one's lap, permitting swishing the denture around a few minutes, and then replaced in the mouth while screened behind the dinner napkin or handkerchief which is raised to the mouth in a normal and natural use.

Another object is to provide a pouch with a plurality of compartments to permit one section to contain the denture cleansing solution and another to hold clear water or a mouthwash to serve as a rinse.

It is a further object to provide a sterile pouch with the objectives set forth above which can be relatively inexpensive to manufacture, yet will afford more sanitary, efficient, and convenient means with which to clean a denture, either under normal conditions in one's home or even in a public place.

Various other objects and advantages of this invention will be more apparent from the following specification and the drawings forming a part of the application.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a plan view of a denture receptacle embodying the present invention.

FIG. 2 is an enlarged sectional foreshortened view of the pouch as seen on line A—A' of FIG. 1.

FIG. 3 is a fragmentary view similar to FIG. 2 but showing the closure strips in separated condition.

FIG. 4 is a top plan view of the denture cleansing receptacle showing the upper end in partially opened position.

FIG. 5 is an exemplary front view of a denture receptacle containing dentures.

FIG. 6 is a front view of the denture cleaning receptacle shown in the preceding figures containing a plurality of pouches.

FIG. 7 is a side view of the multiple unit receptacle shown in FIG. 6.

FIG. 8 is a plan view of another embodiment of a denture cleaning receptacle embodying principles of the invention.

FIG. 9 is a plan view similar to FIG. 8 but showing still another embodiment of the invention.

DETAILED DESCRIPTION

Referring particularly to the drawings, FIG. 1 shows a denture cleansing pouch 1, which comprises a flexible receptacle that may be made of suitable synthetic resin sheet material such as polyethylene, polyvinyl, polyethylene fluoride, or any other suitable flexible sheeting material approximately 0.002 inch in thickness which is heat sealable and capable of being formed into a pouch type container impervious to air and moisture. Sheetting that is translucent and transparent is preferable as it permits viewing both the condition of cleanliness and the degree of dissolution, where required, of solid cleaning material used in certain embodiments of this invention.

One method of forming the preferred pouch 1 is to fold a sheet of synthetic resin material longitudinally to form bottom 2 of the pouch. Side edges 3 and 4 are formed by heat sealing the same. The top 25 of the receptacle is provided with reclosable, interlocking means comprising interfitting means 5 and 9.

In FIG. 2, the interlocking means is closed. The means 5 includes an attaching strip 6 which carries male member 7, which, for example, is somewhat T-shaped in cross-section. Releasably interlocking therewith is means 9 which includes a female channel 11 to receive male member 7 and also has an attaching strip 10. Strip 10 is attached to pouch panel 14 adjacent the openable and reclosable end of the pouch and strip 6 is attached to the opposite pouch panel 14'. The constricted neck portion 8 on male member 7 is disposed between the walls of the female channel 11 in means 9. When the rib-like male member 7 and female groove 11 are pressed together they lock with each other in fluid-tight relationship. There is a restricted slot 12 comprising the mouth of channel 11 through which the enlarged outer portion 13 of rib 7 passes during such interlocking action. Strips 6 and 10 preferably are attached respectively to the panels 14' and 14 by suitable heat sealing of the same, or cemented thereto.

Moreover, the terminal edges of the closure means 5 and 9 which respectively include the rib and channel means 7 and 11, which are shown in locking relationship in FIG. 2, are preferably heat sealed at the ends 23 and 24 as shown in FIG. 1.

In the embodiment of the invention shown in FIGS. 2 and 3, the inner surfaces of panels 14 and 14' are at least partially coated with a thin layer 60 of denture cleanser material. Because of its thin nature, layer 60 quickly dissolves when water or other suitable liquid is added to the pouch.

In FIG. 4 the pouch is shown with the upper end partially opened. The opening 30 is of such size that one or more dentures or partial dentures and bridges may be introduced readily into the pouch. Liquid may then be added to such extent as to cover the dentures, as shown in FIGS. 6 and 7.

In FIG. 5, a lower denture 27 and an upper denture 28 are shown immersed in a cleansing solution within the pouch. In such view, opening 30 is closed to render the pouch water-tight. Because it is water-tight, the entire pouch and contents can be shaken and agitated to set off a sweeping and swishing action of the solution over the dentures, similar to the action in an ordinary washing machine, which action is impossible in any denture cup now in use.

Where the cleansing solution in the plastic pouch receptacle is a simple cleansing mouth wash, a few minutes swishing is all that is required to make the dentures fresh and ready for replacing in the mouth. However, where the cleansing solution in the pouch is a soap or detergent, the denture preferably should be rinsed in water or other suitable solution before being replaced in the mouth.

To accomplish such rinsing, a multiple pouch unit, as is shown in FIG. 6, may be used. In this structure, pouches 40 and 41 are attached to each other along a junction folding line 42. These pouches are shown as already having been filled, either at the factory or at time of use, with between ½ oz. and 2 oz. of cleanser and cleaning fluid 43 in pouch 41 and from ½ oz. to 2 oz. of sterile water 44 or other suitable rinsing fluid in

pouch 40. Pouch 41 is shown containing a denture 45. It is to be understood that the sizes of pouches 40 and 41 are adequate to contain a plurality of dentures, as shown in FIG. 5, for example.

Without becoming conspicuous, the user can open the sealed mouth 46 of pouch 41, in FIGS. 6 and 7, which preferably is marked "cleaner," place his denture in it, reclose the watertight mouth 46 and wait a few minutes. If the pouch can be agitated during this time, the cleaning action will be expedited. A glance through the clear plastic of either pouch will show the state of cleanliness acceptable to him. He can even push his finger against the pouch wall and rub the inner surface thereof against the denture, if necessary, to loosen any particle of extraneous material which may be adhering to the denture without danger of rupturing the pouch.

If desired, a still further pouch may be added to the duplex pouch assembly 40 and 41, shown in FIGS. 6 and 7, to contain, for example, a second rinse solution.

The type of duplex pouch shown in FIG. 5, folds along line 42 to form the small unit illustrated in FIG. 7 for easy placing within the side pocket of a man's coat or within a woman's purse if it is desirable that the denture cleaning process not be observed. If there is to be a rinsing after such cleaning, the pouch can be covered by a napkin or handkerchief on the lap while the change from one unit into another of the duplex pouch is being made.

Inasmuch as the foregoing denture cleaning pouches are meant for immediate use under any and all conditions, they are fabricated ready for use in differing circumstances. For example, in FIGS. 6 and 7, the pouches are completely prepared for immediate use, while in FIGS. 8 and 9, the pouches shown therein contain solid denture cleaner material to which water or other suitable fluid is to be added to obtain an effective quantity of cleaning solution.

In FIG. 8, the exemplary pouch 50 is shown with a soluble tablet 51 of cleansing material attached within the pouch, such as adjacent one corner thereof. To use this arrangement, the sealed mouth 53 of the pouch is opened, the denture is inserted, and water or other suitable fluid is added to the limit of line 52 which, for example, bears the legend: "Fill to this line or to above the DENTURE." When the mouth 53 is sealed closed, the pouch can be put aside until cleaning is completed. Although the cleansing tablet 51 dissolves rapidly, the cleansing can be hastened by agitating the package. Thus, if a quick cleaning is desired, agitate the package to swish the contents, take a look at the denture through its transparent wall, then remove the denture, rinse it under a tap or replace the cleansing fluid in the pouch with plain water or other rinsing fluid and rinse the denture therein.

FIG. 9 shows a pouch similar to the one in FIG. 8 but the solid denture cleaning material is disposed therein in the form of a thin stripe thereof applied to the interior surface of one or both walls of the pouch and under which conditions, it is almost instantly soluble in water. The stripe 55 of cleanser material may, for example, comprise powdered denture cleanser material which is moistened with a volatile liquid, such as ethyl alcohol, to produce a paste-like consistency which then is applied to the inner surface of one or both walls of the pouch in a layer of substantially uniform thickness by

one of several methods, such as by an automatic stencil procedure, a rotatable roll similar to a printing roll, by spraying, or otherwise.

Still another technique which is satisfactory, but a little less convenient is to place a suitable quantity, such as $\frac{1}{2}$ teaspoon of cleansing powder within the pouch, add adequate water or other fluid thereto to dissolve the powder and then place the denture therein, seal the pouch and cleanse the denture in the manner described above.

It will be seen from the foregoing that all of the pouches are sealable in fluid-tight manner, preferably by the closure means, shown in detail in FIGS. 2 and 3, or any other equivalent means. It will be understood that the closure means 7 and 9 shown in said figures function by the walls of female member 9 temporarily deforming during insertion therein of the elongated male member 7 by slidably spreading the sides of means 9 apart and, as the member 7 is progressively disposed within the channel 11, the edges of the walls of the channel immediately move into close engagement with the longitudinal constricted neck portion 8 to provide a fluid sealing relationship between the co-engaged member 7 and means 9.

The denture cleansing pouches containing denture cleaner, either in the form of a tablet or a coating on the inner walls of the pouch, or a powder, are thoroughly sterilized. For example, a common form of sterilization which may be used is to place such pouches into an evacuating tank. Air is then pumped out until a high vacuum is produced, after which sterilizing gas is introduced. The latter is allowed to act upon the pouches until the evacuating tank and its contents are sterile.

Many denture cleaning formulas are now in use and are satisfactory for the foregoing use. A satisfactory exemplary denture cleaning formula which also contains a coloring ingredient is as follows:

Sodium Perborate	8.0%
Sodium Lauryl Sulfate	5.0%
Hyonic PE 90 (NOPCO)	4.0%
Tricalcium Phosphate	4.0%
Tetra Sodium Phosphate	8.0%
Trisodium Phosphate	70.1%
Oil of Wintergreen	0.8%
F.D. & C. Blue No. 1	0.1%

Many other suitable formulations of various soaps, detergents and cleansing agents may be used.

While the invention has been described and illustrated in its several preferred embodiments, it should be understood that the invention is not to be limited to the precise details herein illustrated and described since the same may be carried out in other ways falling within the scope of the invention as illustrated and described.

I claim:

1. A denture cleansing system comprising in combination, a small generally rectangular pouch-like receptacle adapted to be carried in a small space such as a pocket or purse and formed from flexible sheet material impermeable to fluid and having an opening along one edge through which a denture may be inserted and removed, said receptacle having a sterile interior, closure means for said opening extending along said edge for substantially the full length thereof and operable to seal the same against the passage of fluid, and denture cleansing material in dry soluble condition within said receptacle and adapted to be dissolved to form a fluid solution upon addition of a dissolving fluid to the receptacle to cleanse a denture when contained within said receptacle by massaging the exterior of said receptacle.

2. The denture cleansing system according to claim 1 further including an additional similar pouch-like receptacle connected to said first-mentioned receptacle along one similar edge of each and adapted to contain rinsing fluid, said additional receptacle also having an access opening extending along one edge and provided with a sealable water-tight closure means through which a cleansed denture may be disposed within the rinsing fluid within said additional receptacle to rinse the same and thereby prepare it for use.

3. A denture cleansing system according to claim 2 in which said receptacles are connected together along similar edges thereof and adapted to be folded along a transverse line into side-by-side relationship and said openings and sealable closure means of said receptacles respectively being on exterior surfaces thereof when said receptacles are folded into such relationship for ready access to the interiors of said receptacles.

* * * * *

50

55

60

65