

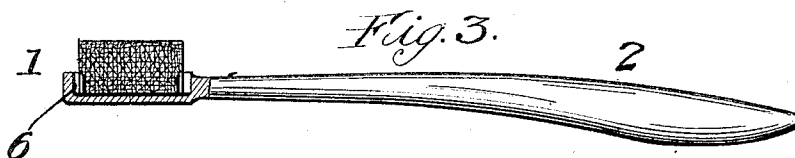
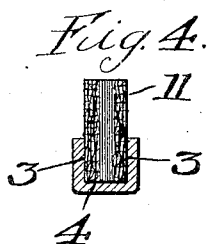
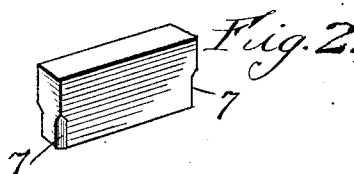
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L. C. DAVIS

BRUSH HOLDER

Filed April 21, 1920



WITNESS:

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A CORPORATION OF ILLINOIS.

BRUSH HOLDER.

Application filed April 21, 1920. Serial No. 375,528.

To all whom it may concern:

Be it known that I, LAWRENCE C. DAVIS, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Brush Holders, of which the following is a specification.

The invention relates to handles for tooth brushes of the type wherein the brush body is removable to admit of the substitution of a new brush body for an old one, and the principal object thereof is to simplify the construction of such a holder and to reduce the quantity of stock employed and the cost of manufacture, without impairing the ability of said holder to securely retain the brush body when the brush is in use. It is a further object of the invention to avoid insanitary accumulation of foreign substances, and to accomplish this and other objects without making the brush body undesirably large, it being a desideratum to minimize the size of the brush body in order that it may be made to effectively reach all parts of the teeth.

I have found that a tooth-brush holder, if constructed with opposed retaining walls, may be made to securely retain a substantially rectangular brush body during all conditions of use, provided the depth of said retaining wall is approximately one-half the height of the brush body, and that the liability of displacement of the brush body, if any, is eliminated if said walls are united at their ends to thereby prevent their lateral separation in any substantial degree.

The rectangular brush body which I employ is largely composed of a substance which materially swells when moistened, the object of using a substance of this kind being to render available the pressure which it exerts when wetted for the purpose of insuring its retention in the brush holder.

In order to insure retention of the brush body in the holder when said brush body is in a dry condition, the brush holder is shaped in such way as to slightly distort said brush body when it is inserted therein, one means for accomplishing distortion of the brush body which I may employ being convergent end portions of the side walls of

the holder which are adapted to indent or displace the lower end corners of the brush body. These divergent portions of the retaining walls may be formed with the same routing instrument which produces the cavity between the walls. If produced in this manner, the ends of the cavity will be of semi-circular form and constitute extensions of said cavity. If the holder is molded instead of being cut, the spaces at the ends thereof may be triangular or other shape, instead of semi-circular.

In applying a brush body to the brush holder, the brush body may be inserted in the cavity of said brush holder with only sufficient pressure to effectuate the slight distortion of the corner portions, the wedging action at said corners being entirely sufficient to cause retention of said brush body in the holder for the time being. After the brush has been moistened, the brush body will swell and become securely anchored in place until such time as another brush body is to be substituted therefor.

In so far as the absorptive property of the brush body and its ability to swell and automatically hold itself in position are concerned, it is immaterial of what substance such body is composed so long as the substance employed answers to these requirements. However, I have found that luffa fibre is a substance which swells sufficiently to retain itself in a handle having an open cavity, and that in addition to this that fibre constitutes an admirable and satisfactory means for polishing the teeth and massaging the gums.

The invention will be understood by referring to the accompanying drawings in which—

Fig. 1 is a plan view;

Fig. 2 is a perspective view showing a compressed brush body having distorted corners;

Fig. 3 is a view showing the brush in section and side elevation;

Fig. 4 represents a vertical cross section of the brush taken on the line 4—4, Fig. 1;

Fig. 5 represents a vertical cross section of the brush when wet and swollen, and

Fig. 6 is a plan view of a fragment of

a modified form of brush holder containing a brush body.

The head 1 of the brush holder is preferably made from the same piece of material as the handle 2 of said holder, this material being celluloid or other non-absorptive substance which is easy to clean and may be easily cut or shaped by suitable tools. Wood may be used in the manufacture of the cheaper brush holders, although brush holders made of this material will only be supplied for emergency purposes in such places as hotels and sleeping cars.

The head 1 of the holder is provided with opposed substantially vertical walls 3, between which is a cavity 4, said walls 3 being preferably held from springing apart under pressure of the brush body by substantially vertical end walls 5 which may be semi-circular in form. A semi-circular form is preferred, mainly, because the cavity 4 and its extensions are readily formed in the piece of stock material which is to constitute the holder by a rotary routing tool relatively to which the stock material is moved lengthwise when the cavity is being formed.

A drainage opening 6 provides for emission of water when the cavity 4 is being cleansed, and this opening is preferably in the free end of the brush head in order that residual water may be expelled by centrifugal force produced by a quick movement of the brush holder.

The brush body, not herein claimed per se but only in its relation to the brush holder, may be composed of penetrative filaments 8 sheathed in luffa fibre 11, and is in form a compressed rectangular block impregnated with a dentifrice 10 and of slightly less thickness than the width of the cavity 4. If said cavity were nine sixty-fourths of an inch wide, the brush body should be eight sixty-fourths of an inch thick. Such a brush body is easily inserted in a holder having a width of that dimension, but if made of absorptive expansible material it will, when moistened, press against the opposed walls of the cavity and automatically hold itself in position. These opposed walls should, however, be of considerable height relative to the vertical dimensions of the block, for otherwise leverage exerted laterally of said block while cleaning the teeth might be sufficient to tilt and separate it from the holder. I have found that if these walls approximate in height one-half the height of the block, said block will remain in place within the holder under the most severe condition of use. Proper dimensions are respectively three-sixteenths and seven-sixteenths of an inch for the walls and the block where the other dimensions are as above given.

The cavity 4, including its semi-cylindrical ends, should be slightly longer than the block so that the lower corners 7, of said block will wedge between the converging walls 5 when the brush body is inserted in the holder. The entire cavity may, for example, be fifty-seven sixty-fourths of an inch long if the length of the rectangular block is fifty-six sixty-fourths of an inch, and if these dimensions are observed the convergence of the semi-circular walls 5 will be effective in producing the necessary wedging action and hold the block until it is moistened and swollen and becomes firmly fixed in the cavity 4. Substantially the same result is attained if the ends of the cavity are of triangular form as shown in Fig. 6.

The mass of luffa or other expansible fibre 9 should be of sufficient thickness relative to the penetrative filaments 8 and to the head 1 of the brush holder and its cavity 4, to admit of the required degree of expansion of the brush body. This mass would approximate three thirty-seconds of an inch in width if the brush body were four thirty-seconds of an inch thick. Such a mass, furthermore, will expand over the sides of the brush holder and there protrude to such extent as to form marginal rubbing surfaces quite distant from the penetrative filaments, thus greatly enhancing the utility of the brush as an instrument for massaging the gums. Scrubbing of the teeth and the removal of plaques will be accomplished by the face of the brush body, whereas polishing and massaging will be effectuated by turning the brush on its side to bring into action only the soft expanded and protruding fibres.

Having thus described my invention, what I claim is:—

1. A holder having substantially straight and parallel lateral walls forming a cavity between them, combined with a tooth-brush body comprising a compressed, absorptive and highly expansible block containing tooth-cleaning filaments.

2. A holder for a tooth-brush body, having an elongated cavity, the parts of the wall adjacent the ends of the cavity being convergent to engage the corners of a rectangular tooth-brush body, and the sides of said cavity being substantially parallel to engage the sides of said body.

3. The combination with a yielding tooth-brush body having a height greater than its width, of a continuous integral walled rigid holder provided with an open-top cavity having unobstructed plane sides of approximately the shape of said tooth-brush body and of a depth approximating half the height of said tooth-brush body.

4. The combination with a holder hav-

ing a cavity narrowed at its ends, of a tooth-brush body approximating only the width of said cavity and terminating at its ends within the narrowed portions thereof.

5 5. The combination of a holder for a tooth-brush body, and a compressed tooth-brush body removably secured in said holder

and consisting of rows of penetrative filaments and an envelope of absorptive fibre which when wetted is capable of expanding 10 over the sides of said holder to thereby form laterally disposed massaging surfaces.

LAWRENCE C. DAVIS.