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J. S. HOFFMAN

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TOOTHBRUSH

Filed May 4, 1932

Fig. 1.

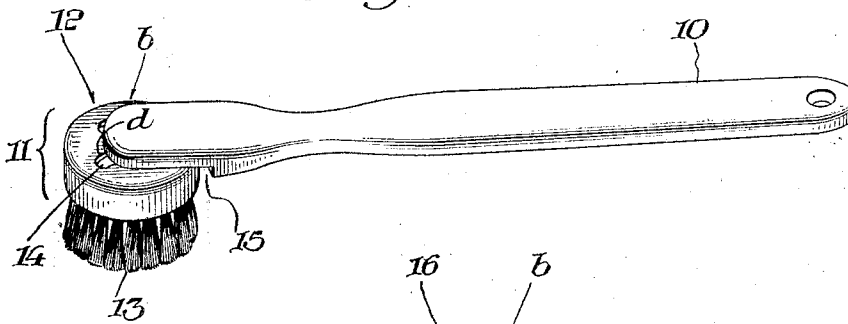


Fig. 2.

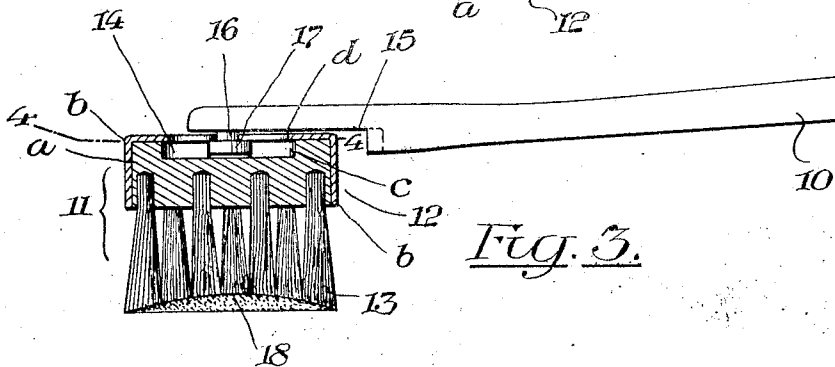
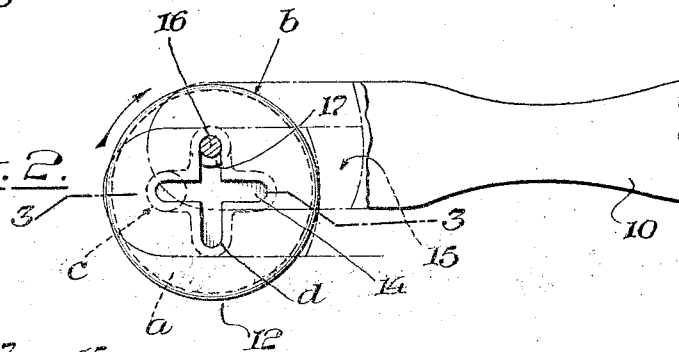


Fig. 3.

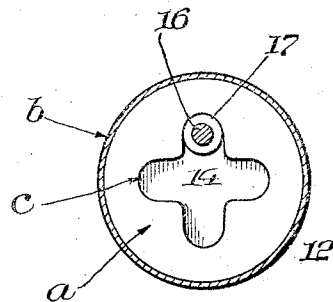


Fig. 4.

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TOOTHBRUSH

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This invention relates to toothbrushes, and it has for its object to provide a simple, cheap and efficient toothbrush whereof the brush head can be given an independent rotary cleansing motion by the act of manipulating the handle of the brush while the acting surface of such head is in close contact with the teeth of the user.

To this end the invention generally stated comprises a handle member, a rotatable brush member, and a novel coupling for said members, as will be hereinafter described; the scope of the invention being defined in the appended claims.

15 In the drawing—

Figure 1 is a perspective view of a toothbrush embodying the preferred form of my invention.

20 Fig. 2 is a plan of the toothbrush, one end of the handle, with the exception of the pivot, being broken away to expose the underlying grooved portion of the brush head.

25 Fig. 3 is a longitudinal vertical section through the brush as on the line 3—3 of Fig. 2, the adjacent portion of the handle being shown in elevation.

Fig. 4 is a horizontal section immediately above the brush head body portion, as on the line 4—4 of Fig. 3.

30 Referring to the drawing, 10 designates a suitable handle and 11 a brush head rotatably mounted thereon. The brush head comprises a back 12 having bristles 13 extending from its outer face, which back is provided in its upper surface with a series of undercut grooves 14 (in the present instance four) radiating at intervals from a central point of communication in the back.

35 In the form illustrated the back 12 is composed of a circular body portion *a* and a flanged cap *b* cemented or otherwise secured thereon, the wide portions *c* of the grooves being formed in the top of the body *a* and the narrow portions being constituted by slots *d* formed in the top of the cap and arranged to overlie and register with the wide portions of the grooves, as shown, thus providing a simple, neat and durable structure.

40 The under face of the handle at its upper end is preferably flattened or reduced, as at

15, to provide a recess for the reception of the brush back 12, and this flattened portion has affixed thereto an outwardly projecting pivot pin 16 terminating in a head 17. This head is adapted and arranged to slide freely 55 in the raceway constituted by the radial grooves *e* in the brush back, while the shank of the pin 16 between the head 17 and the flattened portion of the handle extends freely through the radial slots in the cap *b*. Thus 60 the brush head is coupled to the handle in a simple manner which, when the bristles are in frictional contact with the teeth and a slight orbital motion is imparted to the handle, causes the headed pin to traverse the 65 grooves in succession and co-act with their opposing walls to effect the positive intermittent rotation of the brush head according to the direction of the application of the force on such walls during the motion of the handle. 70

The user of the toothbrush, grasping the handle, holds the brush with its bristles in close contact with his teeth and coincidentally imparts an orbital motion to the handle, in consequence of which the head 17 of the 75 pivot pin 16 is caused rapidly to enter and recede from the radial grooves of the brush head in succession, the pin head in each case when it enters a groove being moved therein to a position eccentrically of the brush head 80 and therefore exerting a turning effect on the brush head. Hence succeeding turning movements may be rapidly imparted to the brush head while it is in contact with the teeth, thus positively revolving the brush 85 head and ensuring an effective cleansing action of its acting bristle surface on the teeth. This surface is preferably slightly concave as indicated at 18 (Fig. 3) in order to contribute to its intimate contact with the surfaces of 90 the teeth.

It is to be understood that my invention is not limited to the particular exemplifying construction herein disclosed, as structural changes may be made within the principle of the invention and the scope of the appended 95 claims.

I claim—

1. A toothbrush comprising a handle member and a rotatable brush member adjacent 100

one end thereof, one of said members having guide grooves therein with a common point of entrance and constituting a raceway, and the other member having a pivot projection in interlocking sliding engagement with said raceway and operable therein by orbital manipulation of the handle member to effect the rotation of the brush member against the surface of the teeth.

2. A toothbrush comprising a handle member and a rotatable brush member adjacent one end thereof, said brush member having undercut guide grooves therein with a common point of entrance and constituting a raceway, and said handle having a headed pivot in interlocking sliding engagement with said raceway and operable therein by orbital manipulation of the handle member to effect the rotation of the brush member against the surface of the teeth.

3. A toothbrush comprising a handle member and a rotatable brush member adjacent one end thereof, said brush member including a circular back having a series of undercut guide grooves therein radiating from a central point of communication, and said handle having a headed pivot in interlocking sliding engagement with said raceway.

4. A toothbrush comprising a handle member and a rotatable brush member adjacent one end thereof, said brush member including a circular back having a series of guide grooves therein radiating from a central point of communication in the back, and including also a cap on said back having relatively narrow slots therein in registry with said grooves, and said handle having a headed pivot in interlocking sliding engagement with the said grooves and slots.

Signed at New York in the county and State of New York this 2nd day of May A. D. 1932.

JACOB S. HOFFMAN.