Dec. 8, 1931. R. R. MYERS 1,835,319

TOOTHBRUSH

Filed Aug. 12, 1925

Fig. 1

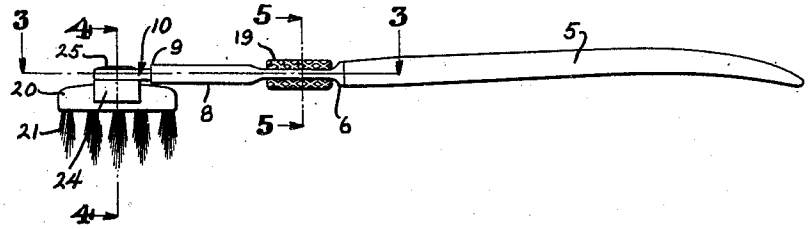


Fig. 2

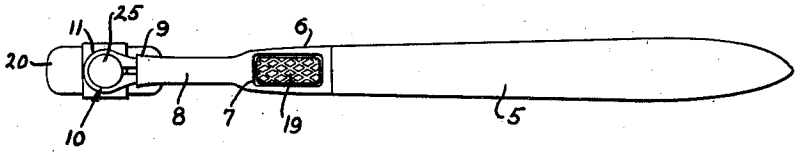


Fig. 3

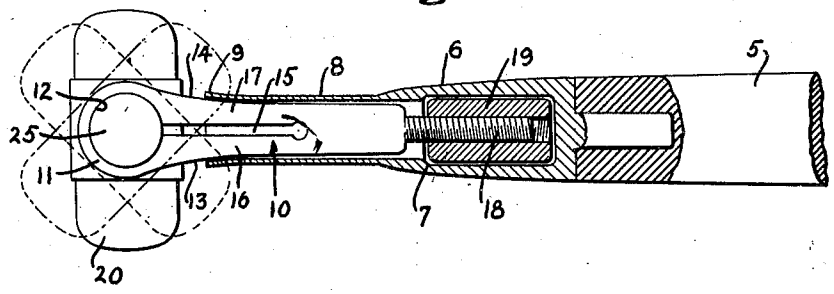


Fig. 5

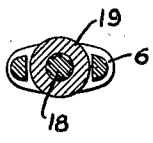


Fig. 4

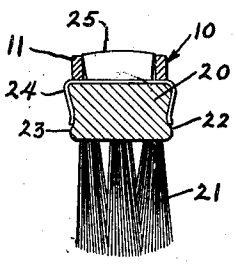
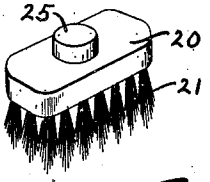


Fig. 6



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UNITED STATES PATENT OFFICE

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TOOTHBRUSH

Application filed August 12, 1925. Serial No. 49,762.

This invention has relation to tooth brushes of the adjustable type in which the brush head is renewable.

A main object of the invention is to provide a simple clamping mechanism for adjustable tooth brush handles that will securely hold the brush member in a frictional clamped engagement therewith permitting the brush head to be instantly turned at any desired angle to the longitudinal axis of the brush handle, and held in such position solely by the friction of the clamping mechanism.

A further object is to provide a brush construction in which the brush member may be renewed when the same becomes worn, at small expense.

Other objects and advantages will appear from the following description, reference being had to the drawings accompanying the same, in which:

Fig. 1 is a side elevation of the complete brush.

Fig. 2 is a plan view of the same.

Fig. 3 is an enlarged partial plan view of the brush end portion, parts being shown in section, and a plurality of brush adjustments being shown in dotted lines.

Fig. 4 is an enlarged transverse section of the brush taken on line 4—4 of Fig. 1.

Fig. 5 is an enlarged transverse section of brush through the adjusting nut, taken on line 5—5 of Fig. 1.

Fig. 6 is a perspective view of a modified form of brush head.

Referring now more particularly to the drawings, the handle 5 of the brush is substantially flat and curved at its outer end in order to conform to a person's hand, and is formed of any desired material. Rigidly secured to the outer end of the handle in a suitable manner is a metal member 6, provided just beyond its point of attachment to the handle 5 with an elongated opening 7, the outer end 8 being of a tubular form eliptical in cross section, the extreme end 9 of the member 6 being slightly flared outwardly.

Mounted within the tubular portion 8 is a clamping device 10, which preferably consists of a flat metal member provided with a circular head 11, having a circular opening 12 formed therein, its oppositely disposed sides 13 and 14 tapering inwardly from the outer end portion to the rear portion of the member. Extending from opening 12 inwardly is a slot 15 that terminates midway the length of the clamp member, to form spring clamping arms 16 and 17. The inner end of member 8 is also provided with a threaded stud 18 that is engaged by an adjusting nut 19 disposed within the opening 7 of the metal member 6.

The adjustable tooth brush member preferably consists of a back 20 formed of a suitable material provided on its lower face with a plurality of usual brush bristles 21. Secured in clamped relation to its oppositely disposed sides 22 and 23 and midway between its ends is a metal clamping member 24 provided on its upper surface with a cylindrical stud 25, whose side wall tapers slightly from its upper end to the back 20 of the brush head in order to form a perfect clamping surface when engaged by the circular opening 12 of the metal clamping member mounted on the brush handle.

By rotating the adjusting nut 19 the clamping device 10 will be drawn rearwardly, the flared outer end of member 6 forcing the spring arms 16 and 17 together so as to cause the circular apertured end of the clamp 10 to firmly engage the tapered wall of stud 25 and thus hold the brush head in frictional clamped engagement with the handle.

As the brush head is secured to the handle solely by frictional engagement with the handle clamping member it will be noted that it may be readily turned and adjusted to various positions as clearly shown in Fig. 3 without operating the adjusting nut 19.

In Fig. 6 I have shown a modified form of brush head in which the clamping member 24 is dispensed with, the stud 25 being formed integral with the back of the brush head 20 and preferably of the same material, this form being considered important as it may be manufactured much more economically than the form first described.

It is well understood that a person's teeth should be brushed in a vertical direction towards and away from the gums. By pro-

viding a comparatively small brush that may be instantly adjusted at various angles with respect to the handle, a person may readily brush the teeth in such manner, and further the interior surfaces may be readily reached for cleansing.

What I claim is:

1. A toothbrush construction including a brush-head having an upstanding stud on the back thereof, and a handle pivotally engaging said brush-head, said handle having a hollow portion in the outer end thereof and a clamping mechanism slidably disposed in the hollow portion, said clamping mechanism being adapted to engage said stud, and rotatable means disposed on the handle and in threaded association with said clamping mechanism for operating the same to frictionally clamp the mechanism to the stud.

2. A tooth brush construction including a brush-head, an upstanding stud on the back of said brush-head, a handle provided with a slidable stud gripping element, and means including a rotatable member, for detachably constricting the element about the stud on said brush-head to frictionally clamp the handle to the stud.

3. A toothbrush construction including a brush-head, an upstanding stud on the back of said brush-head, and a detachable handle provided with spring clamping arms slidably associated therewith, and rotatable means for relatively displacing said arms to grip the stud and hold the brush-head in adjusted relation with the handle.

4. A toothbrush comprising in combination, a back having an upstanding stud thereon, a handle having a hollow portion, means slidable, axially, substantially within the hollow portion of the handle, and a threaded element, rotatably engaging said means for detachably and frictionally associating the means and stud to clamp the handle thereto.

5. A toothbrush comprising a back having an upstanding stud formed thereon and a handle detachably attached thereto, said handle provided with a tubular outer end, the inner end of the tubular portion opening into a nut receiving aperture, a stud clamping member having a stud receiving opening in its outer end and a rearwardly extending slot leading from said opening, whereby the size of the stud opening may be decreased in diameter, a threaded stud formed on the inner end of said clamping member, and a nut disposed in the aperture of the clamping member and engaging said threaded stud.

6. A toothbrush construction including a brush-head, an upstanding stud on the back of said brush-head, a detachable handle provided with spring clamping arms, and having a hollow portion to receive said arms, the arms being movable axially, in said hollow portion, for engaging the stud to hold the brush-head in adjusted angular relation to the handle, and means, rotatable relative to the handle, for connecting the arms with the handle.

7. A toothbrush construction including a brush-head having a stud on the back thereof, a handle provided with clamping means adapted to detachably engage said stud and frictionally clamp the same to the handle, and threaded means, rotatable relative to and recessed within the handle, to operate the clamping means and connect same with the handle.

8. A toothbrush construction including a brush-head, an upstanding stud on the back of said brush-head, a handle having a hollow portion in the outer end thereof, a clamping mechanism disposed substantially within the hollow of said handle, said clamping mechanism being adapted to engage said stud, and means, rotatable relative to said handle, associated with said clamping mechanism for operating the same within said hollow portion to frictionally clamp the mechanism to the stud and to connect said mechanism with the handle.

9. A toothbrush comprising a handle having a tubular portion, a resilient element, slidable relative to and extending into the tubular portion of the handle; rotatable means for moving said resilient element, axially, relative to the handle; a brush-head, and means on said brush-head, frictionally and detachably embraced by said resilient element whereby the brush-head and handle may be held in selective positions relative to each other.

10. A toothbrush comprising a brush-head; a handle having a hollow portion; a stud on said brush-head; a variable tension clamp engaging the stud and extending into the hollow portion; and means, associated with the handle and in rotatable relation thereto, for operating the clamp, whereby the brush-head and handle may be detachably connected and whereby selective and relative angular adjustment may be effected between the brush-head and handle.

11. A toothbrush construction including a brush-head having an upstanding stud thereon, a stud clamp, a detachable handle substantially enclosing said clamp, and a member rotatable relative to the handle and in threaded engagement with the clamp.

12. In a tooth brush holder, a handle having a socket therein; a clamping mechanism slidably disposed in the socket; and rotatable means associated with said clamping mechanism adapted to operate the same to engage a brush member.

13. A tooth brush holder comprising a handle provided with a tubular outer end, the inner end of the tube opening into a nut receiving aperture; a brush clamping member having a brush receiving opening in its outer end and a rearwardly extending slot leading

from said opening, whereby the opening may be decreased in diameter; a threaded stud formed on the inner end of the clamping member; and a nut disposed in the aperture and engaging said threaded stud.

In witness that I claim the foregoing I have hereunto subscribed my name this 30th day of July, 1925.

ROBERT R. MYERS.