

Feb. 12, 1924.

1,483,476

F. J. PARKER

TOOTHBRUSH

Filed April 18, 1922

2 Sheets-Sheet 1

Fig. 1.

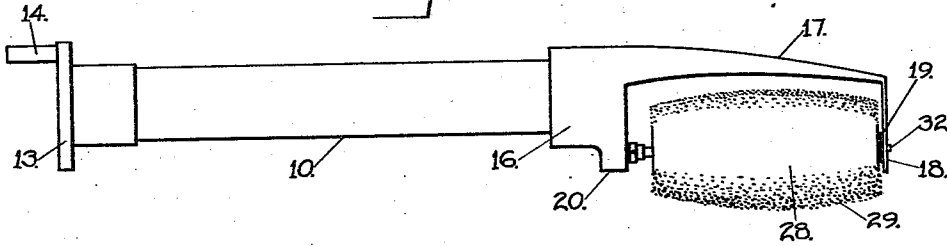


Fig. 2.

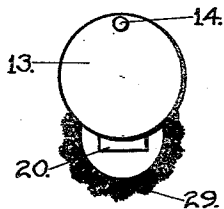


Fig. 3.

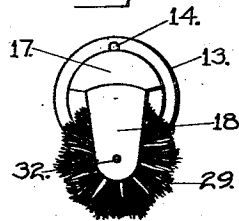


Fig. 4.

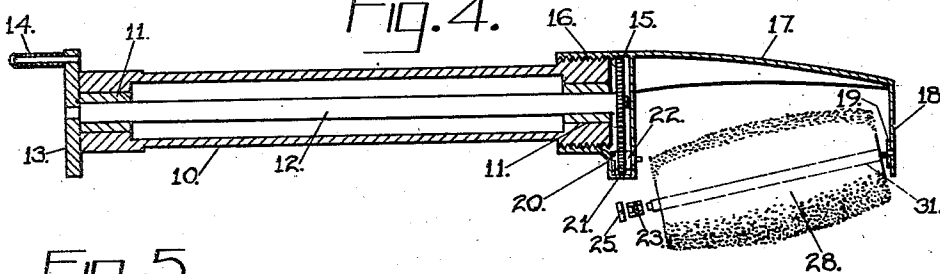
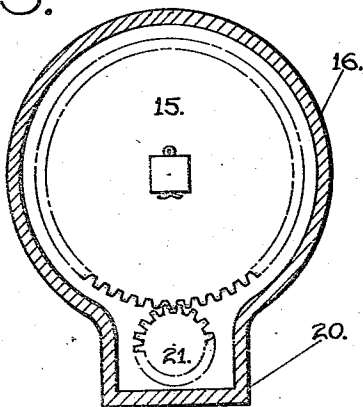


Fig. 5.



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2 Sheets-Sheet 2

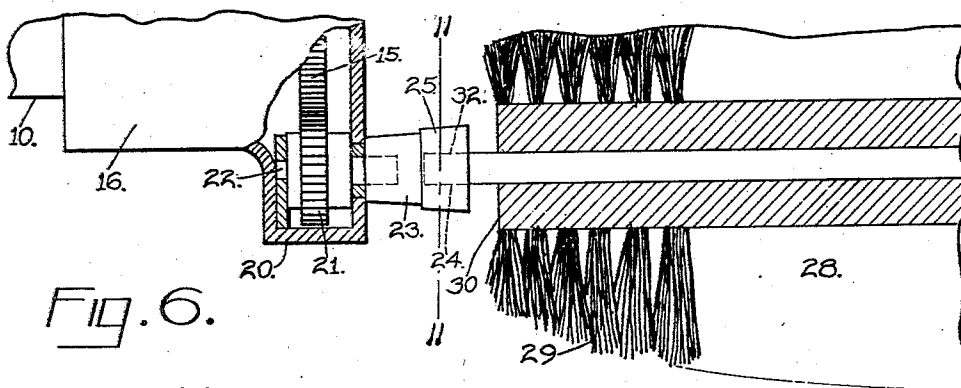


Fig. 6.

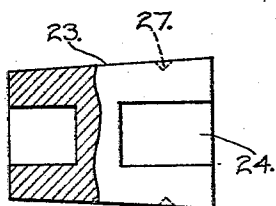


Fig. 7.

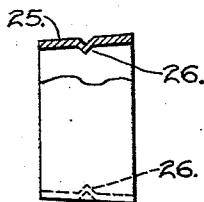


Fig. 8.

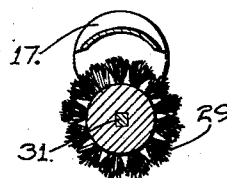


Fig. 9.

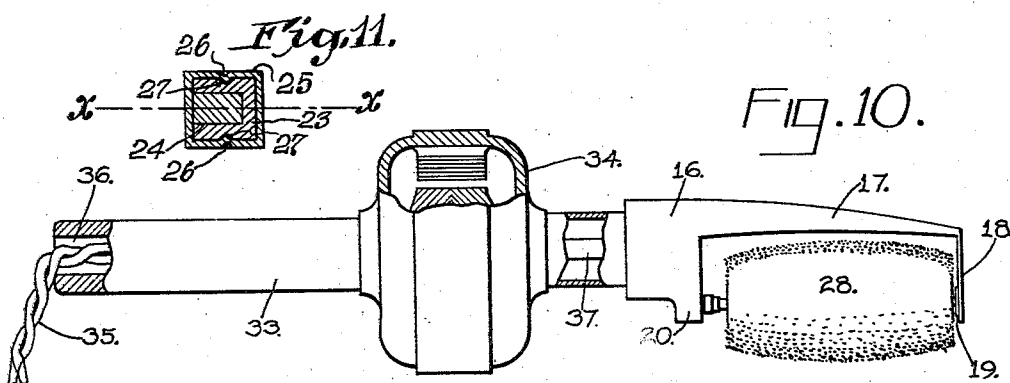


Fig. 10.

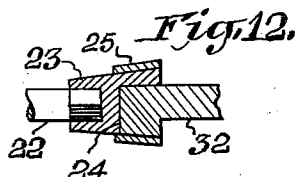


Fig. 12.

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UNITED STATES PATENT OFFICE.

FRED J. PARKER, OF YORKTON, SASKATCHEWAN, CANADA, ASSIGNOR OF TWO-FIFTHS
TO THOMAS FERGUSON ACHESON, OF YORKTON, SASKATCHEWAN, CANADA.

TOOTHBRUSH.

Application filed April 18, 1922. Serial No. 554,372.

To all whom it may concern:

Be it known that I, FRED J. PARKER, citizen of Canada, and a British subject, residing at Yorkton, in the Province of Saskatchewan and Dominion of Canada, have invented new and useful Improvements in Toothbrushes, of which the following is a specification.

This invention relates to the brushing and scrubbing art and has for its object the provision of a rotary tooth brush in which means is provided for imparting rotation to a suitably mounted brush head, the device being particularly advantageous as brushing lengthwise of the teeth and consequently removing all particles of food which may have accumulated, the brush head being preferably of curved shape or tapered toward its ends whereby it may be used to advantage for brushing the insides of the teeth, that is the lingual surfaces as well as the outsides or labial surfaces.

An important object is the provision of a tooth brush of this character in which the brush head is removably mounted so that it may be taken out and sterilized when necessary or replaced when worn.

An additional object is the provision of a device of this character which will be simple and inexpensive in manufacture, easy to operate, highly efficient in use, durable in service and a general improvement in the art.

With the above and other objects and advantages in view, the invention consists in the details of construction to be hereinafter more fully described and claimed, and illustrated in the accompanying drawings, in which:

Figure 1 is a side elevation of one form of my device showing the brush head in operative position,

Figure 2 is an end view,

Figure 3 is an elevation of the opposite end,

Figure 4 is a longitudinal section with the brush head swung into inoperative position,

Figure 5 is a cross sectional view showing the intermeshing gears,

Figure 6 is an enlarged elevation of the releasable connection between the driven shaft and the brush head,

Figures 7 and 8 are detail views of this releasable connection,

Figure 9 is a cross section taken through the brush head and guard,

Figure 10 is a side elevation, with parts broken away and in section, showing a modified form,

Figure 11 is a detail cross section on the line 11—11 of Figure 6 and

Figure 12 is a detail section on the line X—X of Figure 11.

Referring more particularly to the drawings I have shown my device as comprising an elongated hollow handle 10 which may be cylindrical in shape or which may have any desired cross sectional configuration and which may be constructed of any suitable material ornamented or not as preferred. Located within this handle are suitable bearings 11 for a shaft 12 which extends through the rear end of the handle and which carries a disk 13 having an eccentric pin 14 serving as a handle for effecting rotation of the shaft. The other end of the shaft carries a spur gear 15.

Detachably associated with the handle is a guard and brush holder including a housing 16 which surrounds the second mentioned end of the handle and upon which is formed or secured a longitudinally and transversely curved guard plate 17 which has its free end angularly extended as shown at 18, and formed with a bearing 19. Formed on the housing 16 is a lateral hollow extension 20 within which is journaled a spur pinion 21 which meshes with the gear 15. The shaft 22 or axle of this pinion carries a socket 23 which has one side formed with a slot 24 and upon which is slidable a band 25 formed in opposite sides with humps 26 designed to snap into depressions 27 in the outer sides of the socket member 23. The numeral 28 designates a brush head including bristle tufts 29 carried by a cylindrical body 30 having a square hole 31 formed therethrough.

The numeral 32 designates a shaft which has one end journaled in the bearing 19 and which has its other end engagable within the socket 23, being held therein by means of the band 25 which, when in operative position, extends over and closes the slot 24. The brush head is engaged upon this shaft and this shaft is square in cross section for conforming engagement within the hole 31 in the brush head body.

In the use of the device it will be seen that when the parts are arranged as shown in Figure 1 the operator holds the handle in one hand, inserts the brush head into his mouth in engagement with the teeth to be cleaned, and then rotates the disk 13 by grasping the pin 14 with his other hand and imparting rotary movement thereto. This results in turning the shaft 12, gear 15, pinion 21, socket member 23, shaft 32, and the brush head. By this means it will be seen that the teeth may be brushed lengthwise so as to remove any accumulation of food between them. When the brush head becomes worn and needs to be replaced, or in case it is desired to remove it for sterilizing purposes, the band 25 is slid out of obstructing relation to the slot 24 whereupon the shaft 22 may have its free end disengaged from the socket member, the other end of the shaft pivoting within the bearing 19. The brush head may then be removed.

In the modified form disclosed in Figure 10 I have shown the handle 33 as being of different size and shape to form a housing for an electric motor 34 which has its lead wires 35 passing through a hole 36 in the handle. The armature of the motor might be built directly onto the shaft 37, corresponding to the shaft 12 of the first described form, or some other suitable drive means might be provided. The operation of this form of the device will be the same as that of the first described form except that the power is derived from the motor instead of from manual effort.

From the foregoing description and a study of the drawings it will be apparent that I have thus provided a simply constructed and consequently inexpensive tooth brush which has a continuous rotary action and which will efficiently perform all the functions for which it is intended. Owing to the simplicity of the construction and the fewness of the parts it is apparent that there is practically nothing to get out of order and that the device should consequently have a long life.

While I have shown and described the preferred embodiment of the invention, it is of course to be understood that I reserve the right to make such changes in the form, construction and arrangement of parts as will not depart from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention I claim:

1. A rotary tooth brush comprising a handle, a guard mounted upon one end thereof and formed to provide a housing, a shaft journaled longitudinally of the handle and provided with means whereby to be rotated, a gear on said shaft within said housing, a short shaft within the housing carrying a pinion meshing with said gear, a brush head carried by a spindle having one end removably mounted in the guard, and means for connecting the other end of the spindle with said short shaft.

2. A rotary tooth brush comprising a handle, a guard detachably mounted upon one end thereof and having a portion formed as a housing, a shaft journaled through the handle, a gear on said shaft within the housing, a short shaft within the housing carrying a pinion meshing with said gear, a spindle having one end removably mounted in said guard, a brush head carried by the spindle, and means for connecting the other end of the spindle with said short shaft, said means including a socket member engaged upon one end of the short shaft and having its other end formed with a slot for receiving the second named end of the spindle, and a band movably mounted on said socket member for covering said slot.

3. A rotary tooth brush comprising a handle, a guard detachably mounted upon one end thereof and having a portion formed as a housing, a shaft journaled through the handle, a gear on said shaft within the housing, a short shaft within the housing carrying a pinion meshing with said gear, a spindle having one end removably mounted in said guard, a brush head carried by the spindle, and means for connecting the other end of the spindle with said short shaft, said means including a socket member engaged upon one end of the short shaft and having its other end formed with a slot for receiving the second named end of the spindle, and a band movably mounted on said socket member for covering said slot, the socket member and the band being tapered and being provided with means for preventing casual movement of the band upon the socket.

In testimony whereof I affix my signature.

FRED J. PARKER.