

J. R. BOWEN.
TOOTH BRUSH.
APPLICATION FILED SEPT. 16, 1915.

1,188,614.

Patented June 27, 1916.

Fig. 1

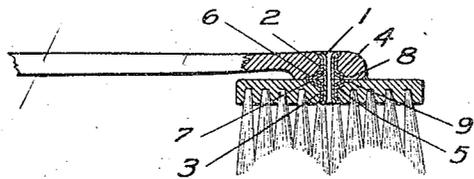
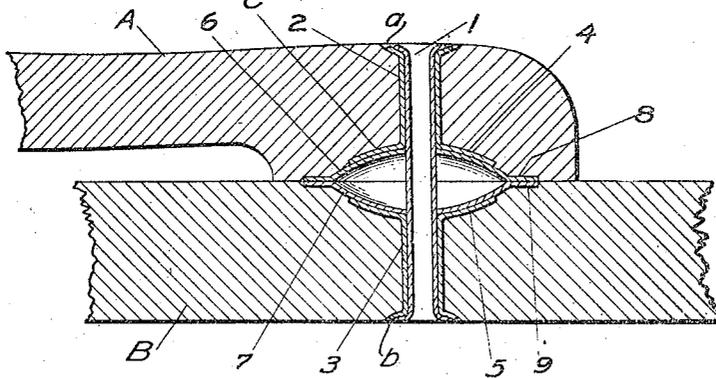


Fig. 2



Witnesses:
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UNITED STATES PATENT OFFICE.

JOSEPH B. BOWEN, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-FOURTH TO HENRY L. GATES AND ONE-FOURTH TO ALBERT E. HEEKIN, BOTH OF CINCINNATI, OHIO.

TOOTH-BRUSH.

1,188,614.

Specification of Letters Patent.

Patented June 27, 1916.

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To all whom it may concern:

Be it known that I, JOSEPH B. BOWEN, a citizen of the United States of America, and resident of Cincinnati, county of Hamilton, State of Ohio, have invented certain new and useful Improvements in Tooth-Brushes, of which the following is a specification.

This invention relates to improvements in tooth brushes of the type having the brush portion adjustably mounted on the handle portion.

An object of my invention is to produce an improved pivot for brushes of this type, in which the handle and brush portion, are held together by a means which permits their ready adjustment to different angles, but holds them firmly in the adjusted positions while in use. This and other objects are attained in the pivot construction described in the following specification and illustrated in the accompanying drawings, in which:

Figure 1 is a sectional view of a tooth brush embodying my invention. Fig. 2 is a view similar to Fig. 1, but showing the pivot construction upon a somewhat enlarged scale.

The tooth brush embodying my invention consists of a handle A and a brush portion B with a pivot C embodying my invention connecting the handle and brush portion. The handle A and brush portion B have registering bores around the inner ends of which are formed concave recesses. Around the outer ends of the bores are smaller concave recesses *a* and *b*. Within the bores in the handles are sleeves 2 and 3, the ends of which are spun over into the concave recesses at the ends of the bores. Seated within and bearing against the walls of the larger concave recesses of the handle and the brush are concave disks 6 and 7 which have annular flat flanges 8 and 9, the faces of which are flush with the contacting faces of the handle and the brush. In order to maintain these flat annular flanges 8 and 9 in sufficient frictional engagement with one another to retain the brush portion in any adjusted position to which it may be moved relatively to the handle and to reinforce the edges of the bores, the end of the sleeves 2 and 3 as well as the ends of the tubular post 1 are spun over to occupy recesses *a* and *b*. This operation is done with the handle and brush portion held tightly

together so that when released the spun over ends of the sleeves and post will maintain the handle and brush portion in snug frictional engagement with one another. In this construction the flanges 4 and 5 engage the convex outer surfaces of the disks 6 and 7 frictionally so that the flanges and disks may move relatively to one another in adjusting the handle and brush portion. This is also true of the flanges 8 and 9 which frictionally engage one another around their entire peripheries and are adapted to move relatively to one another and maintain their frictional engagement during adjustment of the handle and brush portion at any desired angle. I have thus provided a construction in which there are three places of frictional contact permitting adjustment of the handle and brush portion, but affording sufficient frictional surface to maintain the handle and brush portion in any adjusted position with a sufficient degree of rigidity to prevent displacement of the brush portion with relation to the handle while in use. This frictional engagement between the flat flanges of the disks and between the disks and their respective contacting sleeve flanges 4 and 5, is maintained, by the spring-like action of the disks 6 and 7 so that should wear occur between the contacting surfaces, the handle and brush portion will be maintained with a uniform degree of rigidity throughout the length of life of the brush.

Having thus described my invention, what I claim is:

1. In a tooth brush, the combination of a brush portion, bristles secured to the brush portion, said brush portion having a bore in the midst of the bristles, a handle having a bore registering with the aforesaid bore, said brush portion and handle having opposed registering recesses surrounding said bores, cooperating circular friction disks seated in said recesses, and a rivet in said bores, holding the disks in frictional engagement, and having a means for securing it to the handle and located below the back of the handle.

2. In a tooth brush the combination of a brush portion, bristles secured to said brush portion, said brush portion having a bore in the midst of the bristles, a handle having a bore registering with said bore, said brush portion and handle having registering con-

5 concave recesses surrounding said bores, concave friction disks with annular flanges, said disks being located in opposed relation to each other in said recesses having their outer walls contacting with the walls of the recesses and having their flanges contacting with each other and a rivet in the bores and holding said flanges in frictional engagement with each other.

10 3. In a tooth brush the combination of a brush portion, bristles secured to said brush portion, said brush portion having a bore in the midst of the bristles, a handle having a bore registering with said bore, said brush

15 portion and handle having registering concave recesses surrounding said bores, sleeves

located in the bores each having an enlarged flange at one end contacting with the walls of one of said recesses, concave friction disks with annular flanges located in opposed relation to each other in said recesses having their outer walls contacting with said enlarged flanges and a rivet in the bores and holding the flanges of the disks in frictional engagement with each other.

In testimony whereof, I have hereunto subscribed my name this 15th day of September, 1915.

JOSEPH R. BOWEN.

Witnesses:

WALTER F. MURRAY,
 W. THORNTON BOGERT.