

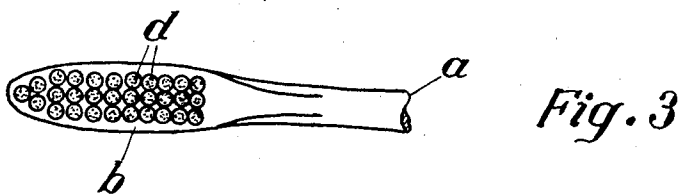
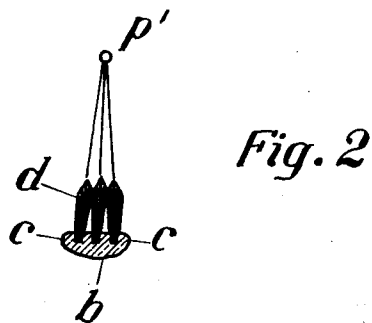
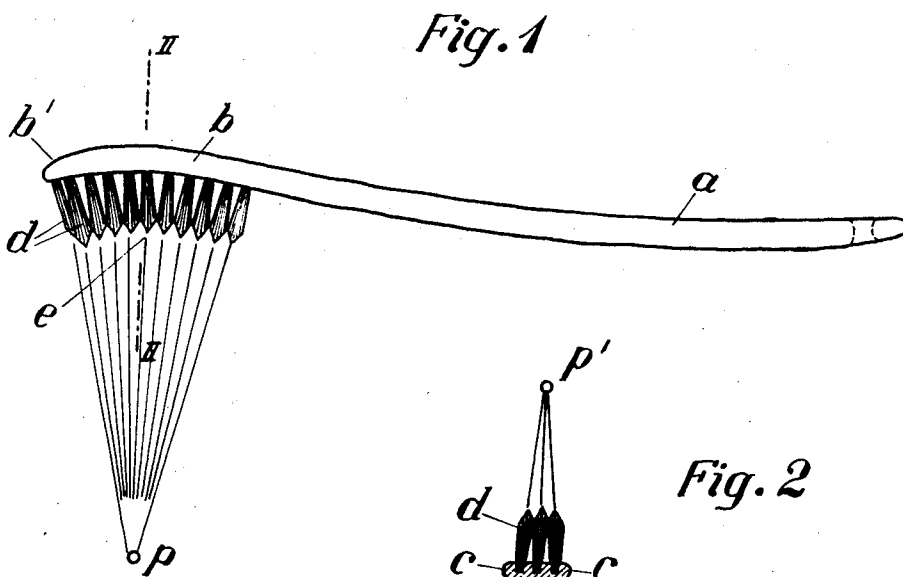
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H. SEELIGER

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TOOTHBRUSH

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## UNITED STATES PATENT OFFICE

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## TOOTHBRUSH

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A distinct disadvantage of tooth brushes now in use arises from the fact that the part which is provided with bristles is straight, so that a brush of this shape not only does  
5 not fit the shape of the rows of teeth but rubs quite unnecessarily against the inner side of the cheeks. With such a brush it is also impossible to clean the molars, as this type of brush will push the food particles  
10 between the back molars. A further disadvantage of the usual tooth brushes is that the two longitudinal edges of the brush proper from which the bristles protrude are frequently ridge-shaped. This shape not  
15 only prevents perfect cleaning but causes the brushing operation to be unpleasant and at times even painful. The above mentioned disadvantages are not eliminated by the hitherto proposed design of tooth brush in which,  
20 in order to ensure a good working of the brush, against the teeth the working surface of the brush, formed by the extremities of the several bundles of bristles, is concave.

These disadvantages are overcome by a  
25 tooth brush according to the present invention, which provides a tooth brush which is superior to hitherto known tooth brushes.

The present invention consists of a tooth brush, characterized in that the brush head  
30 in which the bristle knots are fixed, has a curve which fits the curve of the jaw or teeth, and that the bristle knots are arranged radially to this curve.

The invention further comprises such a  
35 tooth brush in which the bristle knots are arranged longitudinally in such a manner that their axes when produced meet approximately one point.

The invention still further comprises such  
40 a tooth brush in which the bristle knots are also so arranged transversely of the brush head that their axes when produced will meet at approximately a common point, the bristles being inclined towards the centre  
45 knot.

The invention also comprises a tooth brush of this kind in which the brush head tapers towards its far or free end.

The bundles of bristles—as far as the firm  
50 anchoring of the latter will allow it—are

preferably placed as closely to the extreme end and to the edges as possible, so that no inconvenient material remains around the bristles.

By thinning or narrowing of the free end  
55 and the rounding of the longitudinal edges of the brush proper the free end is given a drop-like shape. This eliminates any unnecessary contact with the inner part of the cheeks when brushing and the brush proper  
60 can be moved quite freely in the space between the back molars and the cheek, which is often very narrow. In this way the bristles will work much more satisfactorily even against the back molars and the inner  
65 surfaces of the teeth.

A further characteristic of the invention consists in that the bristle knots are not only arranged radially to the curve of the brush  
70 body but are so inclined laterally so that their outer ends are closer together than the secured ends, that is to say all the bristle knots are so arranged that their axes when produced would meet approximately in one  
75 and the same point. In other words, when the brush is viewed both laterally and transversely, the bristle knots converge at their outer ends, so that these ends are closer together than the secured ends. This arrangement  
80 in which the anchored parts of the knots are comparatively far apart, has the further advantage that the brush can be cleaned very easily while in the case of the hitherto known brushes with parallelly arranged bristles, the  
85 food particles which have been removed by brushing become wedged between the tufts of bristles which are relatively close together at their anchored end and can be removed therefrom only with great difficulty.

The position of the bristle knots, which is  
90 inclined both when viewed from the side and from the front, gives automatically to the working surface of the brush, which is formed by the free ends of the bristles, such a shape that it will fit outer and inner  
95 surfaces of the rows of teeth perfectly.

The drawing illustrates, by way of an example, one application of the invention:

Figure 1 is a side view of the new brush,  
100 Figure 2 is a cross section through the

brush proper on the line II—II of Figure 1, and

Figure 3 is an under plan of part of Figure 1.

5 The handle of the brush is slightly curved, in such a way that the back of the handle is concave. As the drawing shows, the brush head *b*, is curved in the opposite way. It tapers towards its extremity *b'* and this end is shaped like a drop (Figure 3). Figure 2

10 shows that all the longitudinal edges *c* are rounded off. The bundles of bristles *d* are arranged as shown in Figure 1 in such a way that they all point approximately towards

15 the same point *p*. As Figure 2 shows, they are also inclined transversely so that they all converge towards a point *p'*. The point *p'* may be closer to the brush proper than the point *p*. Figure 1 shows that the working

20 surface *e*, which is formed by all the points

of the bundles of bristles, will fit the curve of the rows of teeth perfectly.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

A tooth brush having an elongated head and knots of bristles secured to the head, said head being curved in side elevation and being thinned and narrowed at its outer end, and the knots being arranged so that their axes longitudinally of the head are radial to the concave face thereof and transversely converge toward the longitudinal center of the head whereby projected axes of the knots both longitudinally and transversely of the head will meet at common points.

In testimony whereof I affix my signature.

HERMANN SEELIGER.

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