May 23, 1933. C. A. McKINLEY 1,910,304

TOOTHBRUSH

Filed Dec. 27, 1932

Fig. 1.

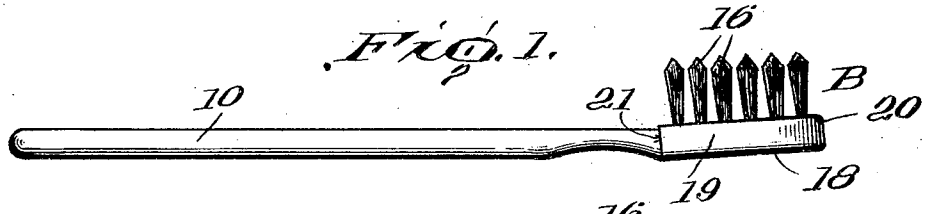


Fig. 2.

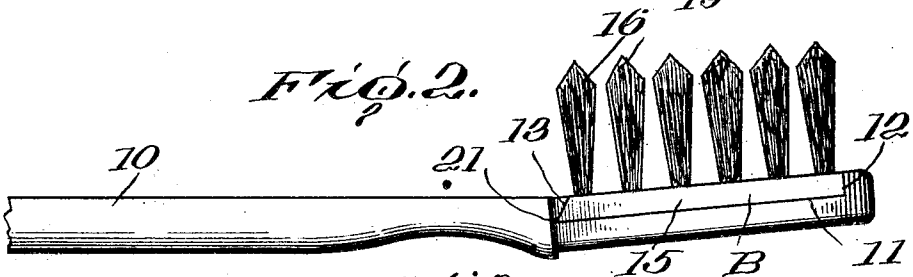
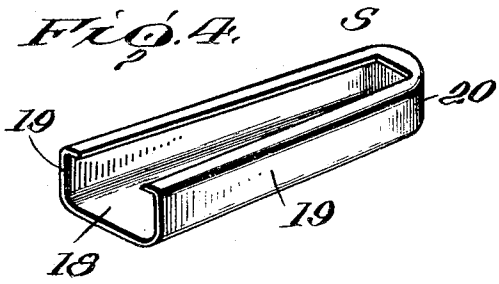


Fig. 3.



Fig. 4.



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UNITED STATES PATENT OFFICE

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TOOTHBRUSH

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This invention is a toothbrush of the type provided with a removable and replaceable brush-head.

One of the objects of the invention is to provide removable brush-heads for a toothbrush, of a character which may be manufactured and sold at low cost, and which will be capable of disengageable attachment to a handle constructed to receive it, so that a brush-head, after such brief use thereof as normally would cause it to become infected, may be readily removed and discarded, and a new one substituted therefor. A further object is to provide a removable-brush-head toothbrush equipped with simple and efficient means for rigidly and firmly retaining the removable head in position during normal usage of the brush. A further object is to provide a toothbrush of the character described in which the removable brush-head may be readily detached from the handle or attached thereto as occasion may require.

The invention will be hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawing:—

Figure 1 is a side elevation of a toothbrush constructed in accordance with the invention. Figure 2 is a similar view showing the brush with the retaining sleeve removed. Figure 3 is a back view of the brush as illustrated in Figure 1. Figure 4 is a detail view of the securing sleeve removed.

Referring to the drawing, 10 designates a standard type handle of a toothbrush, having one face of its brush-head-end provided with a recess 11, extending the full width of the handle, and formed with end shoulders 12 and 13 respectively. It is preferred that the shoulder 13 be slightly undercut and beveled as shown.

The removable brush-head B comprises a body member 15 in which the bristles 16 are secured in any suitable or desired manner, the ends of said body being shaped to conform to the shoulders 12 and 13 respectively, i. e. one of said ends is beveled to fit the shoulder 13. Said body extends the full width of the recess 11, so that while the brush-head is in position within the recess, the sides of the head will be flush with the contiguous sides of the handle.

The removable brush-head B is rigidly held in place by means of a metal retaining sleeve S, which is formed of a body portion 18 of approximately U-shape in cross section, the side walls 19 being joined at one end by an end wall 20, the other end being open. The side walls are constructed and arranged to slidably engage the contiguous flush sides of the removable brush-head and the recessed portion of the handle 10, to prevent relative lateral movement, the top edges of the side walls 19 being turned over slightly to overlap the outer surface of the brush body 15. It will be noted that the sleeve S, by reason of its open end may be readily engaged with the handle by a slidable movement to embrace the brush-head. The handle S is provided with a stop 21 so positioned that the open end of the sleeve will abut against it at approximately the time that the closed end wall 20 of the sleeve contacts with the end of the toothbrush.

In practice, to remove the brush-head, the sleeve S is first removed from engagement with the handle by a longitudinal slidable movement, after which the brush-head may be slid laterally out of the recess. Or the brush body may be disengaged by slightly bending the handle adjacent said recess, springing said body out of engagement with shoulders 12 and 13. A new brush-head may be substituted by pressing the brush body into the recess and then returning the retaining sleeve to its original engaged position.

It will be noted that the sleeve S prevents relative lateral movement of the brush head and the handle, and that the shoulders 12 and 13 and the complemental ends of the brush body prevent relative longitudinal movement of the parts. Therefore, while the brush is being used it will have practically the same rigidity and flexibility as in the old type brushes. It will also be noted that the sleeve is so proportioned that it will not come in contact with the gums during ordinary use of the brush.

The advantages of the invention will be readily appreciated by those skilled in the art

to which it belongs. For instance, it will be particularly noted that a removable-head toothbrush of simple construction is provided, by means of which the removable heads may be readily and quickly engaged with and disengaged from the handle. A further advantage is that a very cheap but durable removable head is provided, of such character that the cost may be made so low as to readily encourage the discarding of used brush heads very frequently, and their replacement by refills, so that the spread of disease by means of infected toothbrushes will be greatly reduced.

Having thus explained the nature of the invention and described an operative manner of constructing and using the same, although without attempting to set forth all of the forms in which it may be made, or all of the forms of its use, what is claimed is:—

1. A toothbrush of the character described comprising a handle having one face adjacent the brush-end thereof provided with a recess extending the width of the handle and formed with end shoulders, a brush head complemental to said recess and of a length to fit snugly between the shoulders, so as to be be held against longitudinal movement, and a holding sleeve slidably engaging the head end of said handle and embracing the outer end and sides of said removable head and the contiguous portions of said handle.

2. A toothbrush of the character described comprising a handle having one face adjacent the brush-end thereof provided with a recess extending the width of the handle and formed with end shoulders, a brush-head complemental to said recess and of a length to fit snugly between the shoulders, so as to be held against longitudinal movement, and a holding sleeve provided with side walls connected by an end wall and open at the other end, the end and side walls embracing the end and sides of the head portion of the handle and overlapping the contiguous sides of the brush head.

3. A toothbrush of the character described comprising a handle having one face adjacent the brush-end thereof provided with a recess extending the width of the handle and formed with end shoulders, a brush head complemental to said recess and of a length to fit snugly between the shoulders, so as to be held against longitudinal movement, a stop on the back of said handle contiguous to the inner end of said recess, and a securing sleeve open at one end, said sleeve having portions engaging the end and sides of the brush-end of the handle and the contiguous sides of the brush head, the open end of the sleeve abutting against said stop.

4. A toothbrush of the character described comprising a handle having one face adjacent the brush-end thereof provided with a recess extending the width of the handle and formed with end shoulders, a brush-head having a body complemental to said recess and of a length to fit snugly between the shoulders, so as to be held against longitudinal movement, and a securing sleeve of approximate U-shape in cross section shaped to engage the sides of the brush-end of the handle and the contiguous sides of the brush-head, the sides of said sleeve having edges overlapping the outer face of said brush head.

In testimony whereof I have hereunto set my hand.

CARROLL A. McKINLEY.