

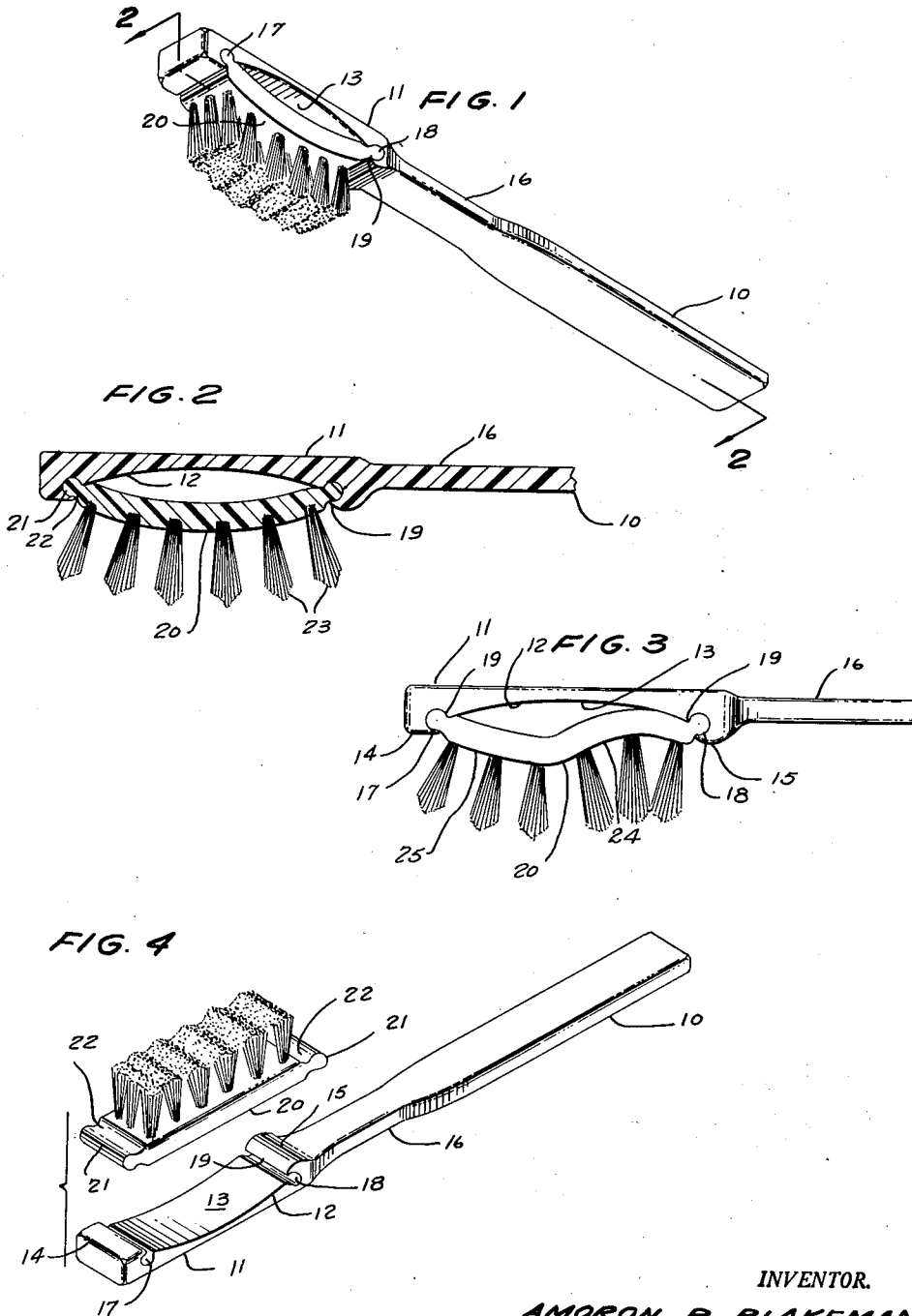
April 26, 1955

A. R. BLAKEMAN

2,706,825

TOOTHRUSH

Filed April 2, 1954



INVENTOR.

AMORON R. BLAKEMAN  
BY

McMorrow, Berman & Davidson  
ATTORNEYS

1

2,706,825

## TOOTHBRUSH

Amoron R. Blakeman, Berwick, La.

Application April 2, 1954, Serial No. 420,530

2 Claims. (Cl. 15—176)

The present invention relates to new and useful improvements in toothbrushes and has for its primary object to provide, in a manner hereinafter set forth, a device of this character which automatically shapes itself in use to conform to the contour of the teeth.

Another object of the present invention is to provide a toothbrush which has a separable and replaceable bristle portion of inexpensive construction which may be inserted in the handle portion with ease and which may be readily removed for sterilizing, replacement, or reversal in the holder as may be desired.

A still further object of the present invention is to provide a demountable bristle head for a tooth brush which flexes in the handle portion so as to present at certain portions of the teeth a greater number and denser group of bristles which assist materially in removing tartar and stains from the teeth, while at other portions of the teeth the bristles assume a less dense grouping, the better to penetrate the space between the teeth and the crevices therein.

These objects and other advantages of the present invention will be readily apparent upon consideration of the following description when taken in connection with the appended claims and the annexed drawings, in which like numerals indicate like parts throughout the several views, and in which:

Figure 1 is a view in perspective of the present invention;

Figure 2 is a side view in section of the head portion of the invention;

Figure 3 is a side view in elevation of the head portion shown in Figure 2, and

Figure 4 is an exploded view in perspective of the invention showing the bristle portion removed from the head portion of the handle.

Referring in more detail to the drawing, it will be seen in Figures 1 to 4 that the invention comprises an elongated relatively inflexible handle 10 having at one end a head portion 11 of particular formation in which the one face 12 has a concavely curved surface 13 longitudinally arranged and terminating at the outer end in a substantially rectangular block 14, and at the inner end the surface 13 merges into a rounded boss 15 which joins smoothly with the handle 10, said block 14 and boss 15 being disposed transverse to said head portion. The handle 10 has a narrow neck 16 in the conventional manner for the hanging of the toothbrush in a suitable fixture, here not shown.

The block 14 and the rounded boss 15 both have inwardly facing recesses 17 and 18, respectively, which are circular in cross section and have slot openings 19 of less width than their diameters.

In Figure 4 is seen most clearly a substantially rectangular demounting bristle portion having a base 20 which for the purpose of this invention is made of a flexible material such as rubber, plastic, or other substance relatively yieldable within prescribed limits, and having at each end a cylindrical bead 21 on a slightly narrowed neck 22.

It will be seen in Figures 1 and 2 that these beads 21 conform in size and shape to the recesses 17 and 18 and the invention has an important feature that the base 20 is dimensioned to be an appreciable length greater than the chord between the recesses 17, 18 in the block 14 and boss 15, respectively, causing the base 20 to be bowed outwardly in rest condition. Base 20 is also of greater longitudinal size than the arc of the surface 13, so that upon conditions of pressure on the one face having the bristles 23, as would be the case when the toothbrush is used, the whole of the base 20 may not fit against the sur-

2

face 13, and a portion, as at 24, may bend inwardly and a second portion, as at 25 is perforce bent outwardly. It is also seen that the bristles at 24 are in a denser group while at 25, are less dense than normal by an appreciable degree, depending upon the initial set or grouping of the bristles and upon the relative dimensions of the base 20 and surface 13.

It is considered relevant to the purpose of the invention that the width of the base 20 be such as to secure the bristles without tending to twist out of the head portion 11, and that the material used in the manufacture of the base 20 be such that its flexibility permit the desired action of bending under pressure.

It is seen that the portions 24 and 25 will move along the whole of the base 20 and will change positions as the pressure of the brush against the teeth and the movement of the brush permits the brush to contact the teeth at various degrees of conformation. This action is of inestimable value in massaging and in the cleansing process found so necessary for perfect dental hygiene.

The invention permits, as is readily understandable, the construction of the handle 10 from plastic, wood, metal, or any substance; plastic being preferable, the common forms of which are not, of course, stable under conditions of high or prolonged heat during sterilizing. The base 20 and the bristles 23 may be made of materials which will withstand high temperatures, permitting a cleaner and more antiseptic condition than is normally found in the use of conventional toothbrushes.

While a single embodiment of the invention has been illustrated and described, it is to be understood that many changes and modifications are contemplated and may be made in the invention without departing from the spirit and scope thereof as set forth in the appended claims.

What is claimed is:

1. A toothbrush comprising an elongated handle having a head portion at one end thereof, said head portion having a concavely curved surface on one face thereof and being formed with a transversely extending recess at each end of said curved surface; a demountable bristle portion having a flexible base and bristles projecting from one face thereof, said base being normally flat and having at each end a bead received within the adjacent one of said recesses, said base being adapted to flex under pressure and bend for a portion of its length inwardly into contact with said surface, the remaining portion of its length being then bent outwardly a greater distance than when in rest condition.

2. A toothbrush comprising an elongated inflexible handle having a head portion at one end thereof, said head portion being formed on one face with a concave surface longitudinally arranged and having a rounded boss in said one face between said surface and said handle and at its end remote from said handle being formed with a rectangular block, said boss and said block each being formed with transversely extending recesses facing inwardly relatively to each other and disposed one at each end of said surface, said recesses being substantially circular in cross section and each having a slot opening of less width than its diameter; and a demountable bristle portion having a normally flat base and bristles projecting from one face thereof, said base being substantially rectangular in shape and having each of its ends formed with a transversely disposed narrow neck terminating in a cylindrical bead of greater diameter than the width of said neck, said base being relatively flexible and dimensioned to be longer than the chord of said surface between said recesses so that when said beads are received one each in said recess said base will curve convexly outward from said surface, said base being adapted to flex under pressure and bend for a portion of its length inwardly into contact with said surface, the remaining portion of its length being then bent outwardly a greater distance than when in rest condition.

References Cited in the file of this patent

## UNITED STATES PATENTS

|           |        |               |
|-----------|--------|---------------|
| 2,111,880 | Waters | Mar. 22, 1938 |
| 2,429,437 | Walker | Oct. 21, 1947 |