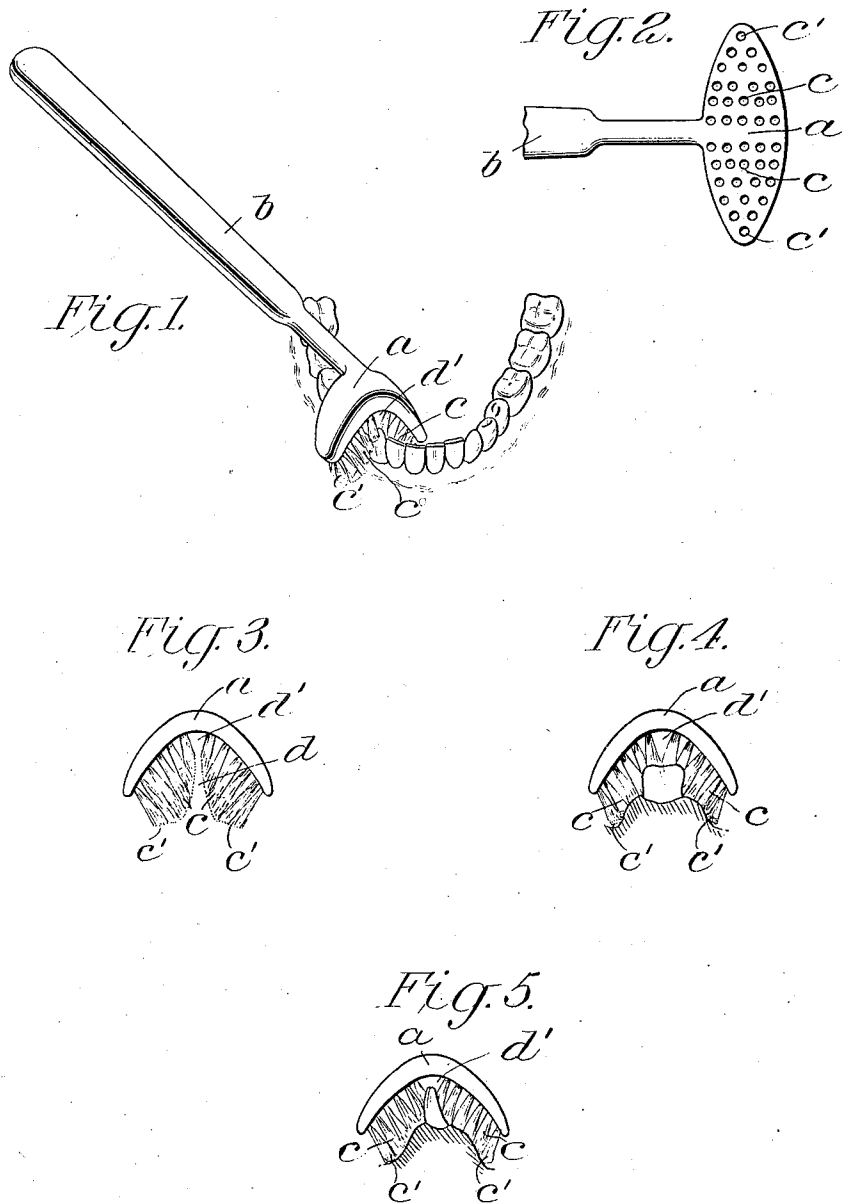


C. E. CARROLL.
TOOTH BRUSH.
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1,091,291.

Patented Mar. 24, 1914.



WITNESSES
J. E. Wade.
Amos W. Hart

INVENTOR
Charles E. Carroll
BY Munn & Co.
ATTORNEYS

UNITED STATES PATENT OFFICE.

CHARLES EDWARD CARROLL, OF NEWPORT, ARKANSAS.

TOOTH-BRUSH.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES E. CARROLL, a citizen of the United States, and a resident of Newport, in the county of Jackson and State of Arkansas, have invented an Improvement in Tooth-Brushes, of which the following is a specification.

Much attention has been given to the treatment and prevention of diseases of the gums. Such diseases usually attack the gums on the inner side where they are subject to comparatively little friction in the process of mastication and where the ordinary tooth-brush is not effective for rubbing or massaging. Food and other foreign substances tend to lodge within the free margin of the gums at such points and cause at first a slight irritation, but, when allowed to remain, inflammation soon results and certain chemical changes take place, causing the formation of a hard scale known as tartar, which adheres to the roots of the teeth and remains as a permanent irritant to the gums. If the irritation be sufficiently prolonged, an ulcerative condition will result, which rapidly destroys the gum tissues to such an extent that the teeth loosen and come out. As the formation of tartar begins underneath the gum margin below the necks of the teeth and as no brush in general use is effective in preventing such condition, it is therefore eminently desirable to provide a brush adapted to prevent such lodgment of foreign substances within the free margin of the gums, and to this end I have devised a brush having the peculiarities of form and construction hereinafter described and illustrated in the accompanying drawing, in which—

Figure 1 is a perspective view of the brush showing the manner of practically applying it to the teeth and gums. Fig. 2 is a plan view of the brush head with a portion of the handle. Fig. 3 is an end view of the brush head. Fig. 4 is an end view showing the brush head applied to large teeth or molars. Fig. 5 is a similar view of the brush head applied to small teeth or incisors.

The head *a* of the brush is practically right angular in form and the handle *b* is attached to the head on one side of the same and at the apex of the angle. The ends of the brush head are tapered or pointed at an acute angle, as shown best in Fig. 2, for a purpose hereinafter stated.

The brush head *a* is provided interiorly

with groups or sets of bristles *c* and *c'* which project inwardly and downwardly at a slight angle to each other and also at an angle to the adjacent sides of the brush head. The free ends of such bristles are cut off on a curving slope, thus forming between them a space *d*, as shown in Fig. 3, which is narrowed from the base upward, and owing to the curvature of the surfaces forming the space, such surfaces are adapted to work upon all teeth of various forms and sizes, as shown in Figs. 4 and 5. The shape of this space is such that when applied to the thin front teeth, the brush passes down over the teeth in such way as to engage the thinnest teeth in the narrow part of the space, as shown in Figs. 1 and 5, the larger teeth being engaged by the larger portion of the space, as shown in Fig. 4. This space extends up to the center of the brush body at *d'*, so that when the brush is applied to front teeth that are unusually long, the teeth may pass well up into this space, allowing the extreme tufts *c'* to come in contact with the gums as in a case of normally shaped teeth.

When the brush is in position on the front teeth the tufts of bristles adjacent to the central space *d'* come in contact with the lateral surfaces, as seen in Figs. 1 and 5, but in passing back over the large double teeth, these same bristles work on the depressions in the biting surfaces of the teeth, as seen in Fig. 4. The outer tufts *c'* of the two groups or sets have their free ends or working surfaces cut off horizontally or practically at a right angle to the similar adjacent surfaces of the groups *c*, *c*, which form an arrangement adapt the bristles *c'* to work on or massage the gums in the manner indicated in Figs. 1, 4, and 5. Thus, the tufts *c* which are nearest the outer ones *c'* work under the free margins of the gums removing all deposits of foreign substances.

The tapered or pointed ends of the brush head, before referred to, are practically of much importance since they enable the brush head to be conveniently turned or manipulated in such manner that the bristles act most effectively on all exposed surfaces of the incisors, as shown in Fig. 1, which operation would be difficult to accomplish without bruising the soft tissues if the ends of the brush head were broadened.

What I claim is:—

1. The improved brush head having its

sides arranged substantially at a right angle to each other and tapered to a point at their extremities and provided interiorly with bristles which extend to the extremities of
5 the sides and project inwardly and downwardly, as described.

2. The improved tooth-brush head having substantially the form of a right angle and tapered toward its extremities and provided
10 interiorly with two groups or sets of bris-

ties indicated by *c* and by adjacent outer bristles *c'*, the free or working ends of the latter being cut off at an angle to the surfaces of the inner group *c*, as shown and described.

CHARLES EDWARD CARROLL.

Witnesses:

SOLON C. KEMON,
PERRY B. TURPIN.