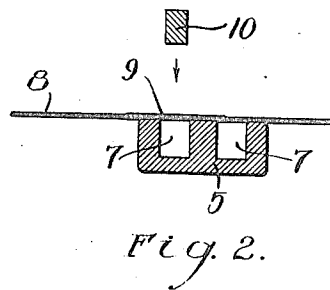
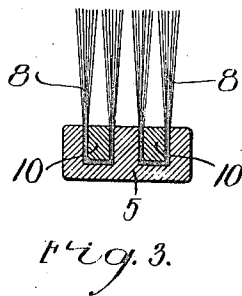
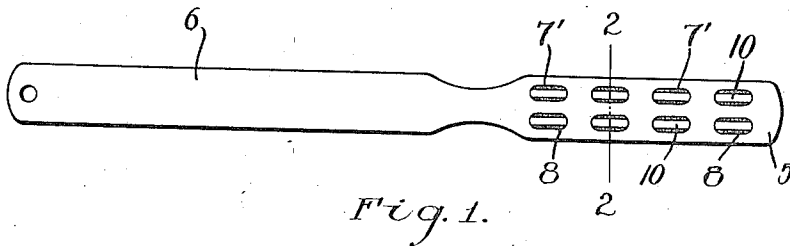


D. L. CHANDLER & J. H. TRAYNE.
TOOTH BRUSH AND PROCESS OF MANUFACTURING THE SAME.
APPLICATION FILED JUNE 23, 1916.

1,238,635.

Patented Aug. 28, 1917.



INVENTORS.
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UNITED STATES PATENT OFFICE.

DANIEL L. CHANDLER, OF FITCHBURG, AND JOHN H. TRAYNE, OF GROTON, MASSACHUSETTS, ASSIGNORS TO THE CELLSET BRUSH COMPANY, A CORPORATION OF MASSACHUSETTS.

TOOTH-BRUSH AND PROCESS OF MANUFACTURING THE SAME.

1,238,635.

Specification of Letters Patent.

Patented Aug. 28, 1917.

Application filed June 23, 1916. Serial No. 105,510.

To all whom it may concern:

Be it known that we, DANIEL L. CHANDLER and JOHN H. TRAYNE, citizens of the United States, residing at Fitchburg and Groton, in the counties of Worcester and Middlesex and State of Massachusetts, have invented new and useful Improvements in Tooth-Brushes and Processes of Manufacturing the Same, of which the following is a specification.

This invention relates to an improved process of manufacturing tooth brushes, the object of the invention being to provide a cheap and efficient process whereby a brush may be manufactured which is so constructed that the bristles are absolutely locked into the body portion of the brush so that they cannot be detached therefrom.

The invention consists in the improved process hereinafter set forth in the specification and particularly pointed out in the claims.

Referring to the drawings;

Figure 1 is a plan view of the body portion of the brush.

Fig. 2 is an enlarged section of the body portion of the brush taken on line 2—2 of Fig. 1 and illustrating a tuft of bristles in position to be forced into a slot in the body portion of the brush by means of a locking plug.

Fig. 3 is a section taken on line 2—2 of Fig. 1 showing the bristles locked in position in the body portion of the brush by locking plugs.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 5 is the body portion of the brush and 6 the handle thereof. 7, 7 are recesses provided in the body portion of the brush and 8, 8 are the tufts of bristles. The brush is manufactured by the following described process:

The individual bristles forming the tufts are preferably coated intermediate their ends with a coating 9 of collodion. Said collodion is allowed to dry and the bristles are laid across the body portion of the brush and above one of the recesses 7 therein, as illustrated in Fig. 2. A locking plug 10 preferably of celluloid is then brought into contact with the coated portion of said bristles and the same are forced into a recess 7 by said plug, thus doubling said bristles

intermediate their ends at the coated portion thereof and forming one of the tufts 8. The plug 10 is of the same length as the recess 7 (see Fig. 1) so that its opposite ends abut against the opposite ends of said recess and subdivide the same into two slots 7', 7', the bristles being doubled between their ends in said recess and projecting out of said recess through said slots 7' on opposite sides of said plug. The recess is preferably of greater length longitudinally of said body portion of the brush than is the width of said recess. The body portion of the brush is preferably made of celluloid. After the bristles have been forced into the recesses 7 by the locking plug 10, said coating, plug, and the body portion of said brush adjacent to said slots are rendered plastic by means of a solvent, preferably glacial acetic acid and ether. Said coating, plug, and the body portion of said brush adjacent to said slot thus become intimately combined and are then allowed to cool and harden, whereby said coating, plug, and the body portion of said brush become as one piece, being of substantially the same material and the bristles are thus firmly locked in said body portion of said brush.

While we prefer to employ a solvent to render the celluloid of the brush body adjacent to the slot, the plug and the coating on the bristles plastic so that said coating, plug and said portion of said brush body all become plastic and then become intimately combined, and finally allow said coating, plug and said portion of said brush body to solidify, it is to be understood that this invention contemplates a process whereby the bristles are coated intermediate their ends as hereinbefore set forth and are forced into a recess in the brush body formed of celluloid by means of a locking plug formed of celluloid without dissolving said parts of celluloid by means of a solvent.

It will be seen that by the employment of the process hereinbefore described a brush is obtained in which the bristles are firmly locked to the body portion of the brush by the plug and the recess becomes entirely filled by the bristles and plug, the bristles being hermetically sealed and locked within the body portion of the brush, so that there will be absolutely no spaces, however minute,

for any foreign matter to enter. The brush can thus at all times be easily cleansed and is hygienic in every respect.

We claim:

- 5 1. The herein described process of manufacturing tooth brushes which consists in coating a plurality of bristles intermediate their ends with collodion and allowing said collodion to dry; then doubling said bristles
10 by means of a plug of celluloid at the coated portion thereof and forcing them by means of said plug into a recess of the same length as said plug provided in a brush body made of celluloid with the opposite ends of said
15 plug abutting against the opposite ends of said recess; then rendering said coating, plug and the portion of said brush body adjacent to said slot plastic by means of a solvent, whereby said coating, plug and said
20 portion of said brush body all become plastic and are intimately combined; and finally allowing said coating, plug and said body portion of said brush to solidify.

2. The herein described process of manu-

facturing tooth brushes which consists in 25 doubling a plurality of bristles intermediate their ends by means of a plug of celluloid and forcing them by means of said plug into a recess of the same length as said plug provided in a brush body made of celluloid, 30 with the opposite ends of said plug abutting against the opposite ends of said recess, then rendering said plug and the portion of said brush body adjacent to said recess plastic, whereby said plug and said body portion of 35 said brush body adjacent to said recess are intimately combined; and finally allowing said plug and said body portion of said brush to solidify.

In testimony whereof we have hereunto 40 set our hands in presence of two subscribing witnesses.

DANIEL L. CHANDLER.
JOHN H. TRAYNE.

Witnesses:

CHARLES D. SHERY,
BERTHA M. MOONEY.