

SUSAN, J. & A. BIDWELL.  
Tooth-Brush.

No. 163,043

Patented May 11. 1875.

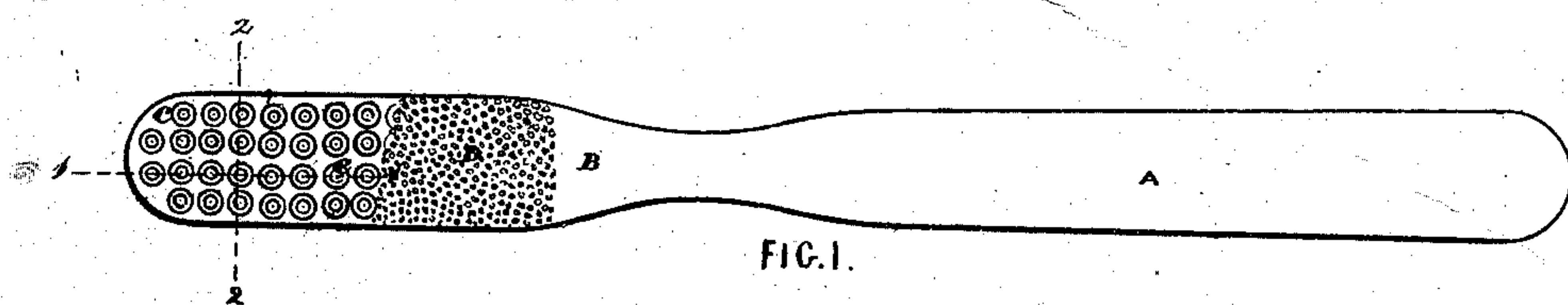


FIG. 1.

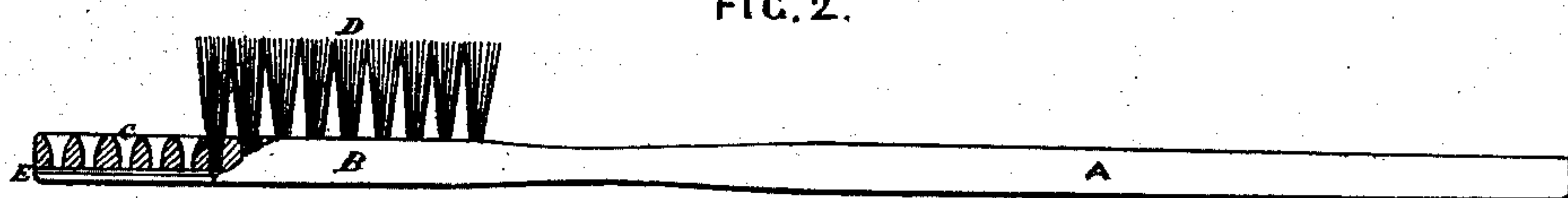


FIG. 2.

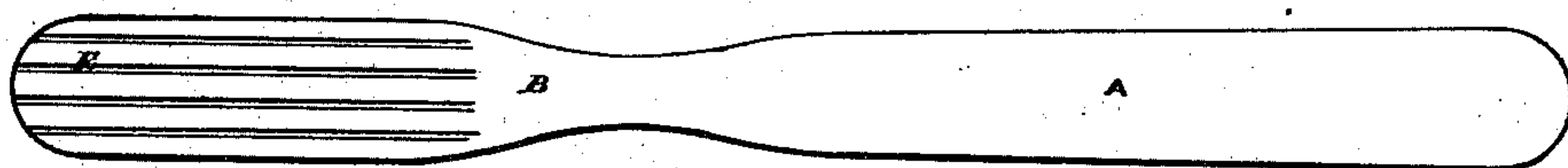


FIG. 3.

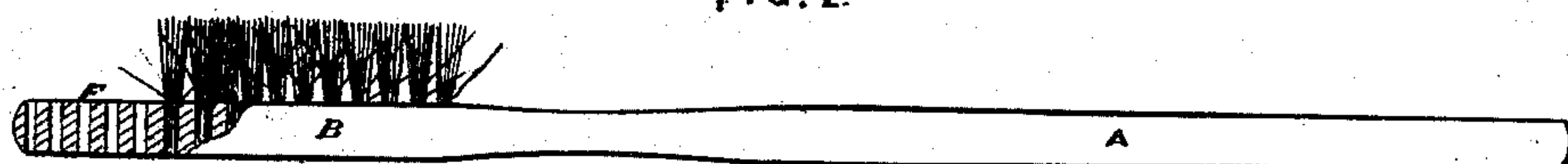


FIG. 4.

FIG. 5.



WITNESSES:

B. F. Weatherdon  
J. Wallace

INVENTORS:

Susan Bidwell  
James Bidwell  
Arthur Bidwell

# UNITED STATES PATENT OFFICE.

SUSAN BIDWELL, JAMES BIDWELL, AND ARTHUR BIDWELL, OF LONDON,  
ENGLAND.

## IMPROVEMENT IN TOOTH-BRUSHES.

Specification forming part of Letters Patent No. 163,043, dated May 11, 1875; application filed  
September 19, 1874.

*To all whom it may concern:*

Be it known that we, SUSAN BIDWELL, JAMES BIDWELL, and ARTHUR BIDWELL, all of London, England, have invented an Improvement in the Manufacture of Tooth-Brushes, of which the following is a specification:

Our invention has for its object an improved manufacture of tooth-brushes, with the view to enable the hair or bristles to be permanently fitted and retained within the head of the brush in a more flexible and durable manner than when rigidly fixed as at present; and consists in drilling or forming the holes in the heads of the brushes with flaring mouths, so that on the hair being drawn in and fixed by wires, cement, or otherwise, in the usual manner, the said hair shall have free expansion within the countersunk flaring holes, and thereby be prevented from being broken or cut off, as in the case of the sharp or rough edges of the holes of the ordinary brushes, when tightly bound, as at present.

The accompanying drawings represent at Figure 1 a top or plan view of a tooth-brush upon our improved principle of manufacture, with part of the hair removed; Fig. 2, sectional side view thereof, through the dotted line 1 1; Fig. 3, back view of the brush; Fig. 4, side view, partly in section, of a tooth-brush upon the old principle, in which straight holes, as hitherto employed, are shown by way of explanatory contrast to our improvements; and Fig. 5, transverse vertical section taken through the dotted line 2 2 in Fig. 1.

In each figure the same letters of reference denote similar corresponding parts.

A A, handle of the brush; B B, the head, showing the countersunk flaring holes *c c*, drilled or otherwise formed therein, for receiving and giving to the hair or bristles an elastic freedom and firm hold within the same; D D, hair or bristles drawn through and secured by wires, cement, or otherwise, in the usual manner; E E, grooving lines formed on the back of the brush for the reception of the fixing-wires; F F, old manner of forming the holes in the heads of tooth-brushes, by which the hair, from being tightly bound, as aforesaid, is subject to be cut through and bent or broken off when in use against the sharp edge of the holes.

It is to be understood that when cement is employed there must not be sufficient to extend to the portion of the bristles in the flaring part of the holes.

We do not claim the brush in which the bristles are inserted into tapering holes.

We claim as our invention—

A tooth-brush in which the bristles are inserted into holes with curved and flaring entrances, for the purposes set forth.

SUSAN BIDWELL.  
JAMES BIDWELL.  
ARTHUR BIDWELL.

Witnesses:

JOHN HARRISON,  
*Notary Public, London.*

G. F. WARREN,  
WILMER M. HARRIS,  
*Both of No. 17 Gracechurch Street, London.*



Correction in Letters Patent No. 163,043.

DEPARTMENT OF THE INTERIOR,

UNITED STATES PATENT OFFICE,

Washington, D. C., October 30, 1883.

In compliance with the request of the parties in interest, Letters Patent No. 163,043, granted May 11, 1875, to Susan Bidwell, James Bidwell, and Arthur Bidwell, of London, England, for an improvement in "Tooth Brushes," is hereby limited so as to expire at the same time with English patent No. 2,291, dated July 2, 1873, granted to the same parties.

It is hereby certified that the proper entries and corrections have been made in the files and records pertaining to the case in the Patent Office.

This amendment is made that the United States patent may conform to the provision of section 4887 of the Revised Statutes.

[SEAL.]

E. M. MARBLE,  
*Commissioner of Patents.*

Approved,

M. L. JOSLYN,

*Acting Secretary of the Interior.*