S. STEVENS.

TOOTH BRUSH.

No. 189,963. Patented April 24, 1877.

Fig. 1.

Fig. 2.

Fig. 3.

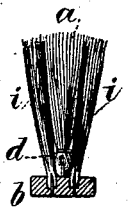


Fig. 4.

Fig. 6.

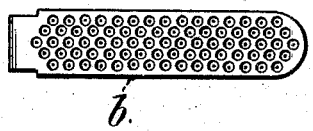
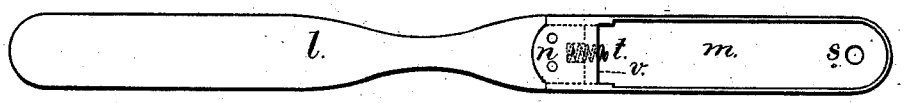


Fig. 5.



Witnesses

Chas. H. Smith

Geo. T. Pinckney

Inventor.

Samuel Stevens.

per Samuel W. Serrell

Atty.

UNITED STATES PATENT OFFICE.

SAMUEL STEVENS, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN TOOTH-BRUSHES.

Specification forming part of Letters Patent No. **189,963**, dated April 24, 1877; application filed February 14, 1877.

To all whom it may concern:

Be it known that I, SAMUEL STEVENS, of Boston, in the State of Massachusetts, have invented an Improvement in Tooth-Brushes, of which the following is a specification:

In Letters Patent No. 160,552, granted to me, a tooth-brush made of tucum fiber is described. This fiber, becoming soft with water, is liable to spread, and the tooth-brush assumes an objectionable shape.

To overcome this difficulty I make use of tufts of tucum fiber, inclosed with tufts of bristles or hair, which serve to hold up the tucum fiber while in use or drying.

I make the brush in a peculiar manner, so as to insure great strength in the attachment of the fiber, and a separate handle is employed with removable heads, so that different qualities of brush-heads may be used in the same handle.

In the drawing, Figure 1 is a cross-section of the brush with the tucum fiber drawn into the center row of holes. Fig. 2 shows the same with the central bunches of fibers bent together and sewed through to consolidate them. Fig. 3 is a similar cross-section of the brush, with tufts of tucum in holes at each side of the central bunches of fiber. Fig. 4 is a similar cross-section, showing the rows of brushes in place; and Fig. 5 is an elevation of the handle-socket adapted to receive the tooth-brush heads. Fig. 6 shows the brush-head before the tucum fiber and bristles are inserted in place.

In the manufacture of tooth-brushes it is usual to draw the tufts of fiber into the holes that are bored into the head by wires, that are either laid through channels in the back, or through longitudinal holes.

In this mode of manufacture, when the tucum fiber is employed, the body of the brush is, by preference, made of a larger mass of fiber than can be drawn into such holes, and, being of a comparatively soft texture, the fiber requires support.

In order to make the brush in the most reliable manner, bunches *a* of fiber are connected to the brush-head *b* by the lacing of wire *c*, passing through the middle row of holes and over each tuft, as illustrated in Fig. 1, and then the bunches of fiber are folded up together and held in a compact form by the longitudinal row of interlaced bending wires or thread, similar to sewing, as at *d*, Fig. 2.

The next rows of holes at each side of the center row are now filled with tufts of said tucum fiber, in a manner similar to the tufts of hair or bristles employed in the ordinary way of making tooth-brushes, as shown at *i*, Fig. 3.

The outside rows of bristles or hairs *k* are now inserted and secured as usual, and the brush is ready for trimming off to the fibers to the proper length. Fig. 4 shows the brush as trimmed off.

These outside rows of bristles or hair may be used with tufts of tucum fiber drawn into all the inner holes in the usual manner, and forming the interior portion of the brush.

It is very convenient to have two or more brushes with the fibrous portion of different lengths, quality, and stiffness, but to carry several such, especially when traveling, occupies space, and they are cumbersome.

I avoid this by making the tooth-brush heads *b* detached from the handle *l*, and providing a socket, *m*, preferably of sheet metal, with a rim around it of a size and shape to receive the movable heads *b*, such socket being attached at one end to the handle, as at *m*, and there is a spring, *t*, inserted at the end of the handle *l*, so that this spring is compressed in the act of introducing the end of the brush-head beneath the lip *v* of the socket, so that there is a sufficient friction of the outer end of the tooth-brush head in the socket to retain the said head in the socket; but the brush and head can be easily withdrawn from the socket by the insertion of any pointed instrument through the hole at *s* in the back.

By this means I am able to introduce one of several tooth-brush heads, and to change them as may be desired.

I claim as my invention—

1. A tooth-brush made of bunches of tucum fiber, surrounded by bunches of hairs or bristles, substantially as and for the purposes set forth.

2. The bunches of tucum fiber *a*, connected to the brush-head *b* by the wire *c*, and secured in a folded condition by the binding wires or threads *d*, as and for the purposes set forth.

3. In combination with the central row of folded fiber, secured by the wire *c*, and sewing at *d*, the rows of fiber at *i*, and outside rows of hairs or bristles *k*, substantially as set forth.

Signed by me this 9th day of February, 1877.

SAML. STEVENS.

Witnesses:
GEO. T. PINCKNEY,
CHAS. H. SMITH.