

April 21, 1931.

J. E. GRAY

1,801,915

TOOTHBRUSH AND THE LIKE

Filed May 26, 1930

Fig. 1.

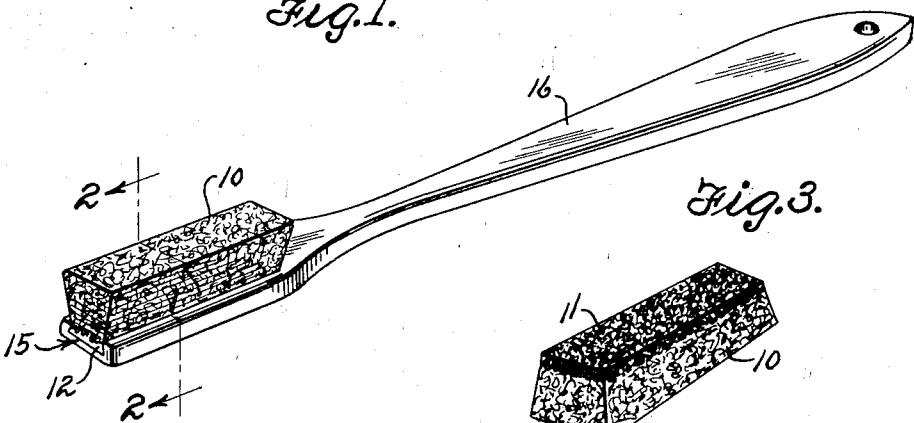


Fig. 3.

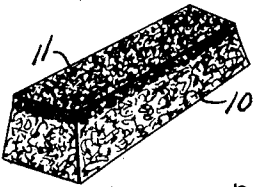


Fig. 2.

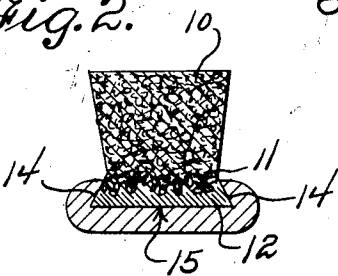


Fig. 4.

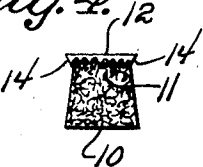


Fig. 5.

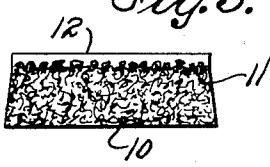


Fig. 6.

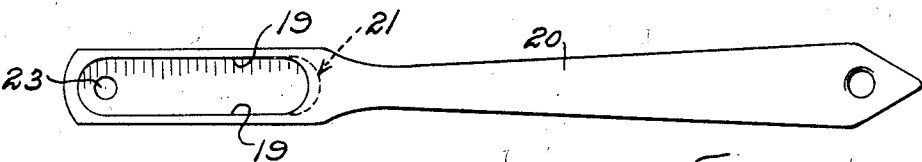


Fig. 7.

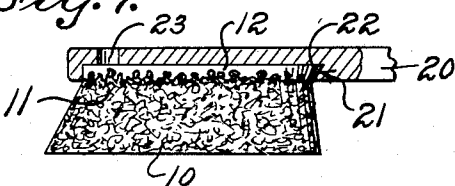
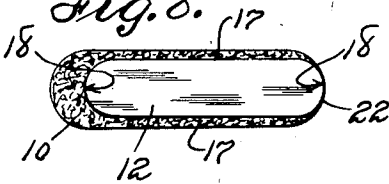


Fig. 8.



INVENTOR.

John Edgar Gray

BY

John Wagner

ATTORNEY.

UNITED STATES PATENT OFFICE

JOHN EDGAR GRAY, OF LYNBROOK, NEW YORK

TOOTHBRUSH AND THE LIKE

Application filed May 26, 1930. Serial No. 455,775.

This invention relates to improvements in tooth brushes or the like, and one of the salient objects of the invention is to provide such a brush with a sponge rubber block or refill in lieu of bristles.

It has heretofore been proposed to employ sponge rubber for this purpose, but in such proposals, the block was secured to the handle by means of threads, or to a backing by means of an adhesive. In both cases, the block readily shears from its backing or support.

Sponge rubber, due to its cellular formation and porosity, possesses an inherent elasticity which ordinary sponge does not have, and which fits in admirably for the uses herein specified. Moreover, it is not affected by water or acid, or alkaline liquids, as is well known, and its yielding as well as elastic properties enable it to fit around and come in close contact with the teeth, so as to remove all impurities.

In accordance with the invention, the top of a block or piece of sponge rubber is compressed to a certain degree, and then a thermoplastic material such as phenolic condensation product, while in fluid condition, is applied to the compressed portion of the block. As the compressed portion of the block is not compressed solid, some of this phenolic condensation product finds its way into the pores of the upper portion of the block, and consequently, when it hardens and the pressure is released, the top of the block will be capped by a rigid backing, and such backing may be inserted in a recess in a tooth brush handle, or may be attached to the handle in any suitable way. Of course, the providing of the block with a backing in this manner, enables the blocks to be used as refills, so that a new backed block may be used after a worn one has been discarded.

With the foregoing objects outlined and with other objects in view which will appear as the description proceeds, the invention consists in the novel features hereinafter described in detail, illustrated in the accompanying drawing, and more particularly pointed out in the appended claims.

Referring to the drawing,

Fig. 1 is a perspective view of one form of brush handle provided with one embodiment of my invention.

Fig. 2 is an enlarged vertical sectional view of the same on the line 2—2 of Fig. 1.

Fig. 3 is a perspective view of one of the sponge rubber refills viewed from the top.

Figs. 4 and 5 are respectively, an end elevation and a side elevation of the refill.

Fig. 6 is a plan view of another type of brush handle.

Fig. 7 is a side elevation of another form or refill shown attached to the type of handle illustrated in Fig. 6.

Fig. 8 is a top plan view of the refill shown in Fig. 7.

In the drawing, 10 designates a block of sponge rubber, and in accordance with the invention, the top of the block is compressed to contract the same as shown at 11, and then fluid bakelite or the like is applied to the top of the block to provide a rigid backing 12 which impregnates the top of the block and fills the pores of said top. In this way, a portion of the block has sufficient rigidity to allow the same to be attached to a handle.

In one form of the invention, the side edges of the backing may be shaped in the molding to diverge upwardly, as shown at 14, and thus a dove-tail backing is provided, which may be slipped into a similar groove 15 in a tooth brush handle 16.

Instead of dove tailing the backing, its sides may be left parallel, as shown at 17 in Fig. 8, and its ends may be rounded as at 18. This form of backing can be slipped into a similarly shaped socket 19 of a tooth brush handle 20, (Fig. 6); the latter being undercut as shown at 21 to allow a projecting end 22 of the backing to be inserted or removed. A hole 23 in the handle permits a suitable instrument to be inserted into the socket for pushing the refill out.

From the foregoing it is believed that the invention may be readily understood, and it will be recognized that the brush or block may be of any ordinary or suitable shape, and the lower surface of the sponge

may be notched or corrugated, as in ordinary bristle brushes; and any variation on its size or formation can be made as circumstances require.

5 While I have disclosed what I now consider to be preferred embodiments of the invention in such manner that the same may be readily understood by those skilled in the art, I am aware that changes may
10 be made in the details disclosed, without departing from the spirit of the invention, as expressed in the claims.

What I claim and desire to secure by Letters Patent is:

15 1. A brush block of sponge rubber having its top compressed and impregnated with thermoplastic material forming a rigid backing for the block.

20 2. A brush block comprising a sponge rubber piece having its top compressed and impregnated with phenolic condensation product which forms a rigid backing for the block.

25 3. A tooth brush comprising a sponge rubber block having its top compressed and impregnated with a rigid backing of phenolic condensation product, and a handle detachably connected to said backing.

In testimony whereof I affix my signature.

30 JOHN EDGAR GRAY.

35

40

45

50

55

60

65