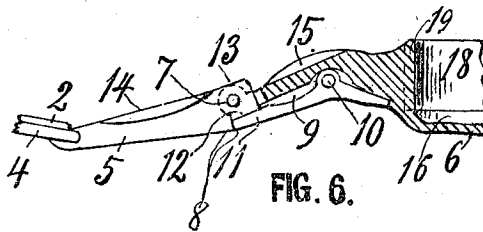
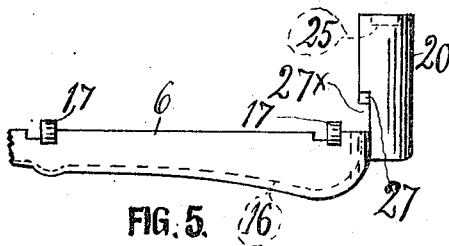
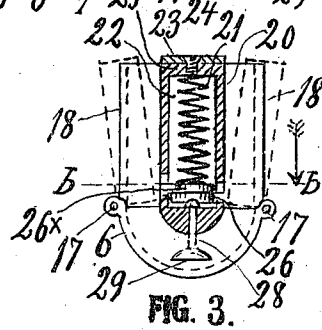
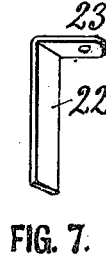
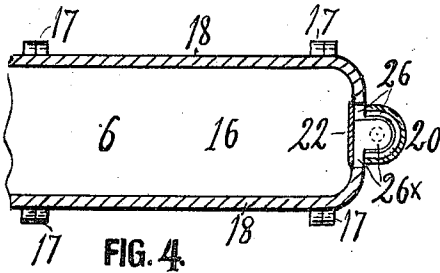
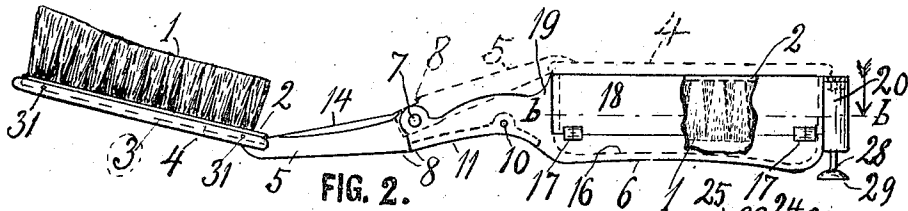
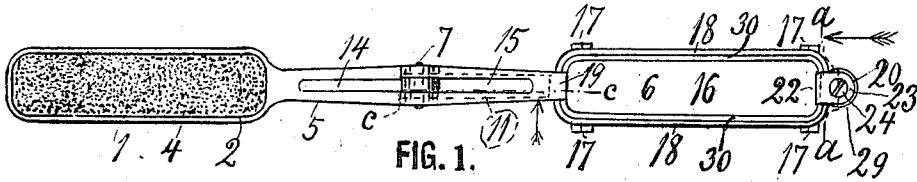


F. E. KRESS.
FOLDING TOOTH BRUSH.
APPLICATION FILED JULY 19, 1909.

949,540.

Patented Feb. 15, 1910.



WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANK E. KRESS, OF ST. PAUL, MINNESOTA.

FOLDING TOOTH-BRUSH.

949,540.

Specification of Letters Patent.

Patented Feb. 15, 1910.

Application filed July 19, 1909. Serial No. 508,431.

To all whom it may concern:

Be it known that I, FRANK E. KRESS, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented a new and useful Folding Tooth-Brush, of which the following is a specification.

My invention relates to tooth-brushes; and the main object is to provide an efficient, convenient and sanitary toothbrush of such construction that it may readily be folded and the brush proper concealed in a casing fixed on the handle.

In the accompanying drawing Figure 1 is a face view of my improved toothbrush in unfolded position. Fig. 2 is a side view of Fig. 1 with a portion of the casing broken away to expose the brush in its folded position. Fig. 3 is an enlarged right end section on the line *a-a* of Fig. 1. Fig. 4 is an enlarged section on the line *b-b* of Fig. 2, or about the same as line *b-b* in Fig. 3. Fig. 5 is an enlarged side elevation of the lower portion of the handle to the right in Fig. 2; the hinged sides of the casing being removed. Fig. 6 is a section on the line *c-c* of Fig. 1. Fig. 7 is a perspective detail view of a shield or apron closing the inlet for the coil spring seen in Fig. 3.

Referring to the drawing by reference numerals, the toothbrush proper is made up of the regular bristle tufts 1, and plate or head 2 in which they are secured. Said head is in any suitable manner secured in a cavity 3 of a pan-shaped plate 4 which may be made integral with the front portion of the handle; preferably this and the entire handle may be made of some light metal.

The handle comprises two sections, 5 and 6, which are pivotally joined together at 7 by a knee-joint or rule-joint having lips 8 adapted to stop against each other when the handle is unfolded. To hold the handle with sufficient firmness both in folded and unfolded position, the handle section 6 is provided with a groove 9 in which is held by a rivet 10 a spring 11, whose longest arm presses against the face 12 of the section 5 when the sections are unfolded, and upon the face 13 when they are folded to the position shown in dotted lines in the upper portion of Fig. 2. The section 5 is strengthened by a rib 14, which when the section is folded occupies a groove 15 in the section 6. The section 6 is formed with a cavity 16 for the tufts of the brush to enter into when the

brush is folded. To make this cavity or casing deep enough for the purpose mentioned and still be able to fold the brush freely into it, I hinge at 17 normally upright sides or wings 18, whose ends are curved against the sides of the front portion 19 and the rear portion 20 of the section 6. The portion 20 is a spring chamber open at its front side so that a spring 21 may be inserted from the brush casing into it, whereupon the opening is closed by an apron or lid 22, whose upper end is bent at right angle to the apron and is secured by a screw 24 upon a bridge 25 spanning the top of the chamber and bearing upon the said spring. The function of the spring 21 is to press upon the upper one of two overlapping and contacting flat rocker-arms 26 and 26*, which are formed on the side wings 18 and project into the spring chamber through notches 27 and 27* in the sides of the chamber, as best shown in Figs. 4 and 5. The spring being compressed between the bridge 25 and the upper rocker arm, the wings 18 are normally held in such positions that they form the main sides of the casing. In the bottom of the spring-chamber is slidably arranged a stem 28 having at its outer end a press-button 29 and at its inner end a head to retain it in place and to press upward under the lower rocker arm and thereby operate both arms and spread the wings 18 while the bristled portion of the brush enters the casing; such spreading of the sides is indicated in dotted lines in Fig. 3. When the button is released from the pressure of the operator's finger, the spring will close the wings 18 and the brush proper is snugly inclosed in the casing, protected from dust and dirt, as the pan 4 closes the top opening of the casing.

At 30 in Fig. 1 is indicated that the brush casing may preferably have its sides flared outward toward the opening. 31 in Fig. 2 are pins holding the brush head 2 in the cavity of the blade or pan 4, so that when the brush becomes worn the pins may be pushed out and the old brush replaced by a new one and the pins reinserted.

From the above description it will be seen that I provide a toothbrush that is convenient to carry in the pocket or in other small space without risk of breaking it as its length is reduced one-half. It will also be understood that by housing the brush proper in the casing it is protected from dust and dirt and thus clean every time it is to be

used. And if it should need cleaning once in a while, the screw 24 may be removed and thereby the apron and the spring, and by further removing the pins 31, the parts are
5 all made accessible to water and other suitable means for thorough cleansing of every part.

What I claim is:—

10 In a toothbrush, the combination with a handle composed of a front and a rear section joined together, a brush head on the front section and a casing on the rear section for housing the brush head when the sections are folded; said rear section having
15 in one end a spring-chamber opening into the casing and provided with notches near the opening, a removable lid closing said

opening, said casing having hinged sides each provided with an overlapping and contacting rocker-arm extending through one of 20 the notches into the spring-chamber, a spring in the chamber pressing upon the upper rocker arm to hold it down upon the lower arm, and a slidable stem inserted in the bottom of the chamber and provided at its outer 25 end with a press button whereby it may be pressed upward and raise the rocker arms.

In testimony whereof I affix my signature, in presence of two witnesses.

FRANK E. KRESS.

Witnesses:

A. M. CARLSEN,
THEODORE SANDER.