Sept. 12, 1950 A. MAURO ET AL 2,521,928

DENTIFRICE DISPENSING DEVICE

Filed Feb. 12, 1947

Fig. 1

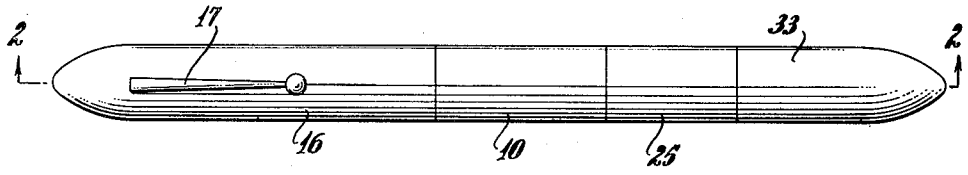


Fig. 2

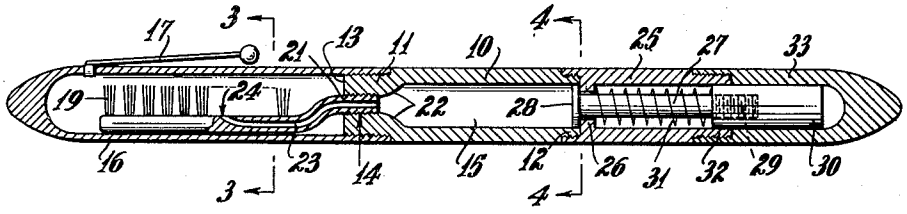


Fig. 5

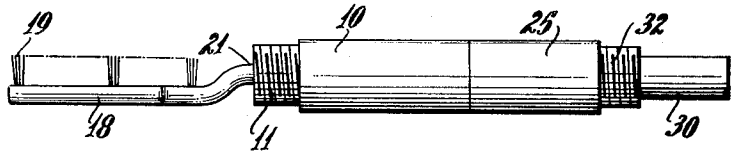
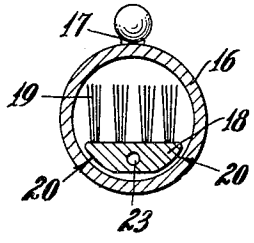


Fig. 3



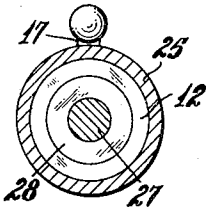


Fig. 4

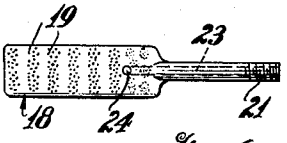


Fig. 6

INVENTORS
Arthur Mauro
John J. Shanahan

BY J. Ledermann

ATTORNEY

Patented Sept. 12, 1950 2,521,928

UNITED STATES PATENT OFFICE

2,521,928

DENTIFRICE DISPENSING DEVICE

Arthur Mauro and John J. Shanahan,
New York, N. Y.

Application February 12, 1947, Serial No. 728,068

1 Claim. (Cl. 222—340)

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This invention relates to toothbrushes, and aims to provide certain new and useful improvements involving the combination within a single or unitary body which may be made to simulate a fountain pen and which may be carried in the pocket like a fountain pen, of a toothbrush and and a dentifrice feed for the brush. Thus, the user will always have at his disposal for immediate use a toothbrush and the dentifrice therefor, the latter being applied to the brush by a simple operation of feeding the dentifrice out of a receptacle contained within the body.

The above broad as well as additional and more detailed objects will become apparent in the following description wherein characters of reference refer to like-numbered parts in the accompanying drawing. It is to be noted that the drawing is intended for the purpose of illustration only and that it is neither desired nor intended to limit the invention to any or all of the specific details of construction shown excepting insofar as they may be deemed essential to the invention.

Referring briefly to the drawing, Fig. 1 is a front view of the combination unit in a horizontal position.

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 1.

Fig. 5 is a side view of the article, with both end caps removed and hence ready for use.

Fig. 6 is a plan view of the brush carrier or head per se.

Referring in detail to the drawing, the numeral 10 indicates a central tubular body which may be cylindrical in cross-section, as shown, which encloses a chamber 15 and has threaded nipples 11 and 12 at the ends thereof. The nipple 11 is thickened inwardly in a radial direction to provide a relatively thick longitudinal end wall 13, and a threaded axial opening 14 is provided through the wall 13. A cap 16, having a pocket clip thereon, is adapted to engage the external threads of the nipple 11.

The brush head comprises the back member 18 having brush bristles 19 thereon, and which is rounded at the two edges 20 for obvious reasons. The member 18 terminates in approximately the S-shape shown in Figs. 1 and 2 and simultaneously tapers into a nipple 21 which is threaded and engageable in the threads of the opening 14 through the wall 13. A channel 23 is provided

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through a portion of the length of the brush head 18, starting at the nipple 21 and terminating in the region of the bristles 19; at the latter point, the channel or outlet 24, turns upward in a curve, substantially as shown in Fig. 2, to minimize resistance to the flow of the dentifrice at the outlet 24. The inner surface of the wall 13 within the chamber 15, is tapered substantially as shown at 22, to facilitate flow of a dentifrice, in either liquid or paste form, not shown, from the chamber 15 into the channel 23 of the brush head 18.

A sleeve 25 is threadably engageable on the nipple 12, and is provided with an internal flange 26 in which a plunger 27 is slidably mounted, the latter having a head or piston 28 within the chamber 15. The other end 29 of the plunger 27 is threaded to receive a knob, cap or the like 30. A coiled spring 31 surrounds the plunger between the flange 26 and the cap 30 and normally urges the cap 30 outward and hence normally positions the piston 28 in contact with the flange 26. The outer end of the sleeve 25 is threaded to receive a screw cap 33 to enclose the plunger cap 30.

The dentifrice, not shown, may be entered into the chamber 15 by unscrewing the sleeve 25 from the nipple 12, and upon restoring of the sleeve to its original position, the device is ready for use. Normally, the entire unit, as shown in Fig. 1, may be carried in the pocket in the manner of a fountain pen.

To use the device, the end cap 33 is unscrewed to expose the plunger cap or knob 30. Depression of the knob 30 forces the piston 28 into the chamber 15 against the force of the spring 31. Hence, some of the dentifrice is forced through the channel 23 and emerges through the outlet 24. Thus brushing of the teeth may be accomplished in a simple and convenient manner, without the need of a separate dentifrice container. When the knob 30 is released, the spring 31 restores the piston and plunger to their original positions. To clean the channel 23, if and when required, the head 18 is unscrewed, and a thin wire or pipe cleaner may be pushed therethrough.

The entire device, excepting for the spring 31, may be made in an attractive form of any one of the so-called plastic materials of which many varieties are available on the market.

Obviously, modifications in form and structure may be made without departing from the spirit and scope of the invention.

We claim.

A device for ejecting dentifrice, comprising a

cylindrical tubular housing having one end open and having a wall obstructing the other end thereof, said wall having an outwardly tapering axial opening therethrough constituting the discharge opening of the housing, said open end of the housing having an externally threaded nipple integral thereon, said housing including said nipple and except for said discharge opening having a constant internal diameter, said housing having a constant external diameter, a cylindrical tubular sleeve having the same internal diameter and the same external diameter as said housing, said sleeve having a wall at one end thereof and having the other end thereof open, said last-named wall having a reduced axial opening therethrough, said sleeve having an internally threaded flange extending beyond said last-named wall and threadably engaging said nipple thereby axially aligning said sleeve and said housing, a stem slidably mounted in said last-named axial opening and having a piston head on one end thereof positioned in said housing between said walls, the other end of said stem being threaded, a cylindrical button having the same external diameter as the internal diameter of said sleeve being slidably mounted in said sleeve, said button having a threaded axial bore therein, said threaded end of said stem registering in said bore of said button, and a coiled compression spring surrounding said stem between said sleeve wall and said button thereby normally urging said button and hence said stem and piston head in a direction away from said first-named reduced opening, the length of said stem in relation to the length of said sleeve being such as normally to position said button partly within said sleeve and partly protruding from said sleeve, said housing being adapted to contain a dentifrice.

ARTHUR MAURO.
JOHN J. SHANAHAN.

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