

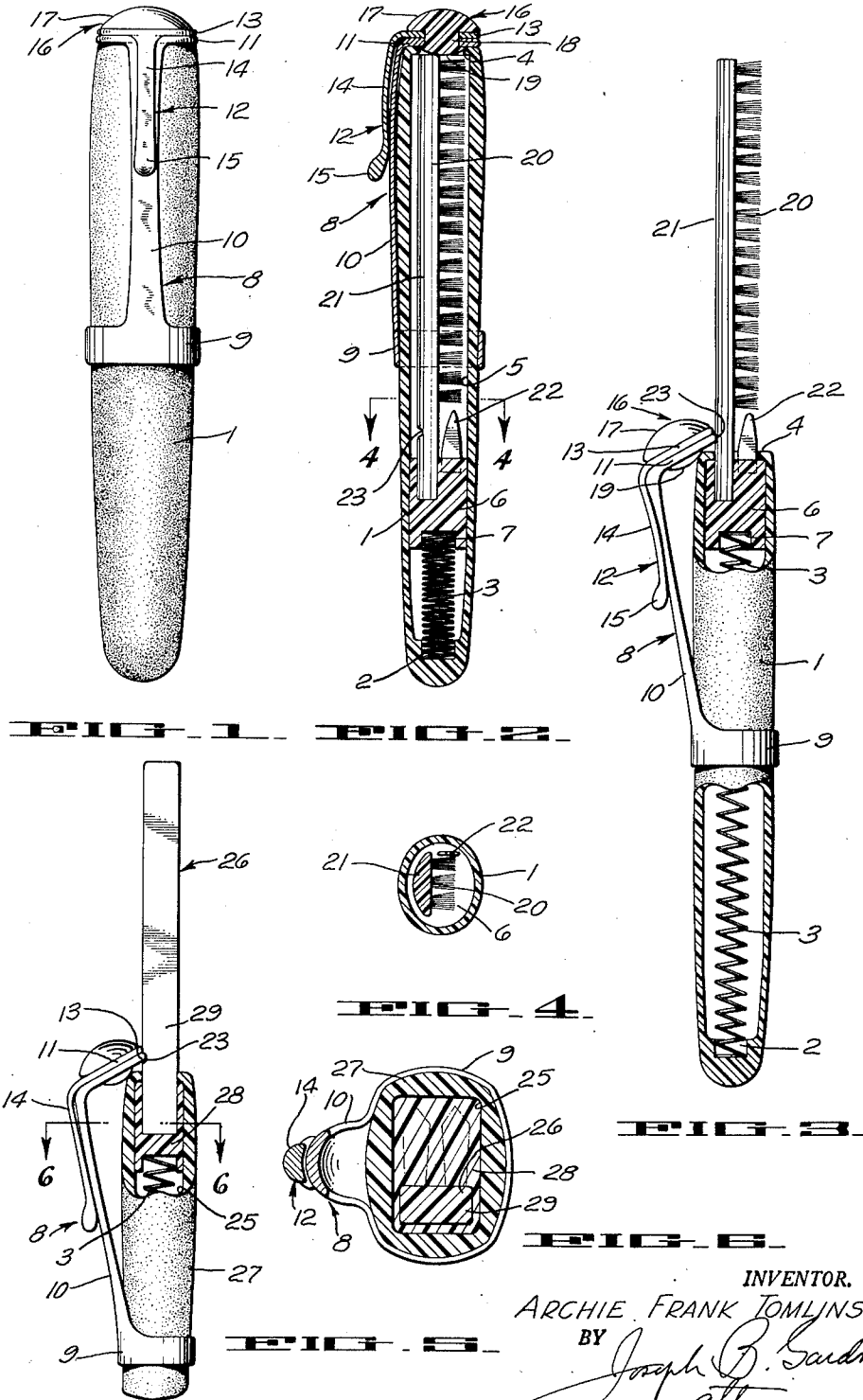
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RETRACTABLE BRUSH AND CASING THEREFOR

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RETRACTABLE BRUSH AND CASING
THEREFOR

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3 Claims. (Cl. 15—184)

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This application is a continuation in part of my pending application Serial No. 16,086, filed March 20, 1948, now abandoned, and the invention relates to brushes for personal use and more particularly to such brushes as are carried by the user when away from home, as at the office, or when traveling. Small brushes such as nail brushes, tooth-brushes, etc., have been carried for years by fastidious persons and to meet the demand for brushes of the requisite size, durability and withal inexpensiveness, various arrangements for this purpose have been proposed. A desideratum which is at once apparent is that the brush shall remain sanitary and clean despite the manner in which it is carried about and the condition of other articles with which it may come in contact. If carried in one's pocket, pocketbook or even in a traveling kit without a protecting cover of some kind, the bristles of the brush readily collect dust and foreign matter. Accordingly, various covers or cases for brushes of this type are known to the art which are more or less effective for their intended purpose.

A disadvantage of many cases of the ordinary type is that they are provided in addition to the brush itself thereby increasing the overall dimensions of the unit. Also cases as usually provided are inadequately fastened in their closed position with the frequent result that the cover becomes partially or completely removed from the body of the case during the normal daily activities of the user and the protection of the case thereby nullified. The co-operating parts of many of such cases also are poorly fitted even when fully closed, have no positive locking means for the cover due either to the additional bulk that would result or the additional expense involved. There is a need therefore, for a brush of the type referred to and a unitary casing which will serve its purpose effectively and will constitute a unit only slightly larger than the brush itself.

It is accordingly an object of this invention to provide a unitary brush for personal use and casing therefor which shall realize, in large measure, the last named advantages.

Another object of the invention is to provide a brush for personal use which is retractable within its casing.

Another object of the invention is to provide a brush which is normally fully enclosed in and protected by its casing, but is instantly available for use when desired.

Another object of the invention is to provide a unitary brush and casing in which the former

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is securely locked within the latter at all times and under all conditions except that of positive release of the locking means provided.

Another object of the invention is to provide a unitary brush and casing in which the latter not only locks the former within its interior when not in use, but also has a second locking position in which the brush and casing form a rigid unit and in which the brush is ready for use.

Another object of the invention is to provide a unitary brush and casing in which the latter not only serves as a protecting cover but also as a handle for the brush when in use.

Still further objects and advantages of the invention will be apparent in the following description and claims considered together with the accompanying drawing, in which:

Figure 1 is a front elevation of one form of my improved brush and casing unit, in closed position.

Figure 2 is a vertical, sectional view taken centrally of Figure 1.

Figure 3 is a view similar to Figure 2 but with the brush in extended position and the upper and lower portions of the casing broken away in the interest of clarity.

Figure 4 is a horizontal sectional view taken on the line 4—4 of Figure 2 and looking in the direction of the arrows.

Figure 5 is a view similar to Figure 3 of a modified form of my invention, but with bristles of the brush pointing in a direction away from the observer and the lower portion of the casing shown as broken away, and

Figure 6 is a horizontal sectional view taken on the line 6—6 of Figure 5 and looking in the direction of the arrows.

Referring now more particularly to the drawing and to Figure 1 thereof there is shown my brush and casing unit in closed position, and in which position there is a general similarity of appearance to the ordinary pocket type of fountain pen. In fact, the preferred overall dimensions of this nail brush and casing do not materially exceed those of the usual pocket fountain pen.

In Figures 1 and 2 the casing is seen to comprise a generally cylindrical body 1 of material similar to that employed in fountain pen manufacture. The lower end of body 1 is closed but is provided above such closure with a central recess 2 for the lower end of a coil spring 3 which snugly fits thereinto. Above the recess 2 the inner wall of the body 1 gradually increases in

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diameter as it approaches the upper end of spring 3 when the unit is in closed position (Figure 2). From a horizontal plane somewhat below this end and thence upwardly to the annular abutment or stop 4 in which the body 1 terminates, the inner wall 5 of the body 1 is of uniform cross section to constitute a cylinder for a cylindrical block 6 snugly guided therein. The lower end of block 6 is provided with a central recess 7 which serves as a seat for the upper end of spring 3.

The cooperation of the component parts of my invention thus far described will be readily apparent from a consideration of Figure 3 to which attention is now invited. Such figure shows cylindrical block 6 in its upper guided position within the cylindrical wall of the body 1 and seated against the annular stop 4 through the pressure exerted by spring 3. Also it will be noted from Figure 4 that the preferred form of cylindrical casing has elliptical cross-section rather than circular in order that the block 6 will not turn in its retaining cylinder and that the brushes united thereto will always be in the same and rigid relation with respect to the body 1 when the unit is in the position of Figure 3. The inclination of the inner wall above recess 2 serves as a stop to limit the inward position of block 6 and terminates just below the latter in its position within the casing body (Figure 2).

As a retainer for positively locking the brushes carried by the block 6 and thereby the latter, in closed position within the body 1 there is provided a snap-acting clip indicated generally at 8 and comprising a band portion 9 encircling the central portion of the body 1 to which it is firmly secured, a tongue 10 extending vertically from the band 9 to the annular abutment 4 where it terminates in an annular closure ring 11 adapted to seat on the abutment 4 when the brush and casing are in closed position (Figure 2). Clip 8 also includes a pocket engaging member 12 resembling somewhat in appearance clips for fountain pens. Such member includes a ring 13 superposed on ring 11 and having a downwardly extending tongue 14 terminating in a ball 15 and overlying the tongue 10. Since the pocket engaging member 12 closely engages the tongue 10 and ring 11 its effect will be to reinforce the spring action of these members.

For uniting the component parts of the clip 8 just described and for exerting the closure pressure to be derived therefrom there is provided a central stud or button 16 including an enlarged upper cap 17, a central, uniting portion 18 which extends through and entirely fills the openings in rings 11 and 13, and a lower cap 19 securely uniting the rings 11 and 13 and serving as a closure for the annular abutment 4.

As will be apparent from the drawing and from the invention as thus far described, the form of the brush to which the preceding components may be adapted is largely a matter of choice. In Figures 1 to 4, for example, a nail brush 20 is shown having an elongated, bristle carrier 21 whose lower end is embedded in block 6 in any desired manner. A slender tine 22 for cleaning beneath the nails may also be imbedded in block 4 if desired. Regardless of the particular purpose of the brush, it is desired to provide a notch or similar indentation 23 in the back wall of the carrier 21 adapted for engagement by the ring 11 and thus to lock the carrier, block 4, body 1 and clip 8 together in

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a virtually rigid unit. It will be noted that the body 1 also serves as a convenient handle for the brush in this position.

In Figures 5 and 6 there is shown a modification of the casing previously described and designated particularly for a toothbrush to be contained therein. Accordingly the cross-section of this modified casing is altered from the elliptical cross-section of Figure 4 in a manner to provide an inner chamber 25 of rectangular cross-section for receiving the toothbrush 26 therein. The body 27 corresponding to the body 1 of the first-described form of the invention is not simply an enlargement of the inner cross-section but has the side walls centrally and longitudinally thickened symmetrically to give the casing body a "rounded-rectangular" form that is not only pleasing in appearance, and compact but is likewise of increased strength and rigidity as will be readily apparent. Block 28 guided within the body 1 snugly fits within the interior thereof as before and has in this form of the invention the bristle carrier 29 embedded in the block as shown in Figure 5. However, it will be obvious to those skilled in the art, that by tapering the carrier into the block, these parts could be moulded in one piece satisfactorily. In either event, the notch 23 for engagement by the ring 13 of the clip 8 is provided as before for the purpose of rigidly uniting the casing and brush for use in the extended position of the latter. Also, if desired to provide for the circulation of air for drying the bristles of toothbrush 26 after use, suitable apertures in the body may be provided.

I claim:

1. A unitary brush and casing therefor comprising a generally cylindrical body having a longitudinal passageway closed at its lower end and open at its upper end, means defining a stop member adjacent said upper end and restricting the opening thereof, a block snugly guided in said passageway intermediate its ends, spring means between said closed, lower end and said block for urging the latter upwardly, a bristle brush having a carrier portion embedded in said block extending thereabove, and a locking cap disposable across said open, upper end to tightly enclose said brush within said body or movable therefrom to permit said spring means to move said block and brush upwardly into a position of use wherein the upper end portion of said block is in engagement with said stop member, and means normally urging said locking cap into said position across said open, upper end.

2. A unitary brush and casing therefor comprising a generally cylindrical body having a longitudinal passageway closed at its lower end and open at its upper end, a block snugly guided in said passageway intermediate its ends, a coil spring between said closed lower end and said block for urging the latter upwardly, an upwardly extending bristle brush having a carrier portion the lower end of which is embedded in said block, and a locking cap for the upper end of said passageway and adapted to be moved laterally thereof when it is desired to eject said brush to a position of use, said cap including a mounting band encircling said body and united thereto, a ring portion adapted to seat over said opening and a resilient tongue joining said ring portion and said band for urging said ring portion into seating position.

3. A unitary brush and casing therefor com-

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prising a generally cylindrical body having a longitudinal passageway closed at its lower end and having an annular abutment restricting its opening at the upper end, a block snugly guided in said passageway intermediate its ends, a coil spring between said closed lower end and said block for urging the latter upwardly into contact with said abutment, a bristle brush having a notched carrier portion embedded in said block and extending thereabove, and a locking cap disposable across said open, upper end to tightly enclose said brush within said body or movable therefrom to permit said spring means to move said block and brush upwardly into a position of use in which the marginal portion of said cap engages the notched portion of said carrier to lock said carrier and casing together.

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