COLLAPSIBLE SAFETY RAZOR

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Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

INVENTOR.

Daniel C. Dillon, Jr.,

BY Peter Richards,

Attorney
This invention relates to safety razors, and the invention has reference, more particularly, to improvements in a safety razor of the type comprising separable blade guard, cap and handle elements.

This invention has for an object to provide a safety razor of the type referred to, the elements of which may be separated and collapsed so as to occupy a minimum of space, and thus be adapted for storage within a carrying case of very small size, whereby to provide a compact razor outfit adapted to occupy but a minimum space within a toilet case or kit, or to be carried in a small pocket of the user's wearing apparel.

The invention has for a further object to provide a safety razor of the type referred to with a telescopically collapsible handle element of novel construction which, when operatively assembled with the guard cap and extended, will easily maintain its extended condition during use of the razor, and yet may be easily manipulated to collapse the same for storage.

The invention has for a more specific object to provide a collapsible safety razor handle which comprises a plurality of tapered telescopically related parts which, when extended will frictionally bind together so as to maintain their extended relation, said parts being keyed together so as to be relatively non-rotatable.

Other objects of the invention, not at this time more particularly enumerated, will be understood from the following detailed description of the same.

An illustrative embodiment of the invention is shown in the accompanying drawing, in which:

Fig. 1 is a plan view showing the razor handle collapsed and guard and cap separated therefrom and arranged for storage in a carrying case of minimum size, the latter being shown in dotted outline.

Fig. 2 is an end elevational view of the razor guard and cap as operatively assembled relative to a razor blade, and a side elevational view of the collapsed handle and a side elevational view of the handle operatively applied to the assembly and extended for use.

Fig. 4 is a longitudinal sectional view of the assembled razor elements, showing the handle element operatively extended for use, said view being drawn on a greatly enlarged scale.

Fig. 5 is an inner end view of the collapsed handle element, also drawn on an enlarged scale; and Fig. 6 is a cross-sectional view, taken on line 6—6 in Fig. 4.

Similar characters of reference are employed in the above described views, to indicate corresponding parts.

Referring to the drawing, the reference character 10 indicates the razor guard element, 11 indicates a razor blade, and 12 indicates the razor cap. Although said guard and cap elements may be made of either non-metallic or metallic material, it is preferred to mold them from plastic material, such e. g. as a synthetic resin plastic.

The cap 12 is provided with an externally screw-threaded coupling stud 13 to project from its inner or under face for extension through an opening in the guard element 10 provided therefor. If the cap is made of plastic material, it is preferable that said stud 13 be of metal, and that it be provided with an anchor head 14, adapted to be imbedded in the body of said cap element 12 when the latter is molded. The cap element 12 is further provided with guide pins 15 spaced outwardly of the coupling stud, and also disposed to project from the inner or under face of said cap element for extension through corresponding openings in the guard element 10 provided therefor.

The razor blade 11 is centrally perforated in any well known manner, whereby to permit projection of the guide pins 15 and coupling stud 13 therethrough, so that the blade may be flexed and clamped between the guard element and the cap element in a manner well known with respect to safety razor blades of the type here involved.

The collapsible handle element of the razor, in an illustrative form thereof as shown, comprises an inner member 16 and a tubular outer member 17. Said outer member is provided with an internal bore 18 inwardly tapering from its outer toward its inner end. The inner member 16 is provided with a correspondingly tapered external surface 19, likewise tapering from its outer toward its inner end, but said inner member 16 is somewhat smaller in minor and major diameters than the corresponding minor and major diameters of the outer member bore 18, so that said inner member is telescopically projectable from the inner or small end of the outer member bore, until stopped by the meeting of its tapered surface with that of said bore.

Formed in the wall of the bore 18 of the outer member 17 is a longitudinally disposed key way channel 20. Formed to project from the tapered surface 19 of the inner member 16 is a longitudinally extending key formation, the same being
preferably molded with the inner member 15 as an integral part thereof.

The inner handle member 15 is assembled with the outer handle member 17 by passing the former, small end first, through the outer open end of the latter and into the bore 18 thereof, and so that the key formation 21 of said inner member slidably engages in the key way channel 20 of said outer member.

After the inner member 16 is inserted into the outer member 17, the outer open end of the latter is closed by a closure plug 22 which is inserted and cemented thereto, and, consequently, although said members 16 and 17 may be relatively moved longitudinally to permit suitably limited projection of one relative to the other, bodily separation or displacement of the one from the other is prevented.

Molded into the inner or small end of said inner member 15 is a metallic coupling bushing 23 having an internally screw-threaded bore 24 adapted, at proper times, to receive and screw onto the coupling stud 18 of guard, blade and cap assembly.

In practice the outer member 17 of the handle element is made of a length approximating the razor for storage in the carrying case C after use thereof is finished. In practice the outer member 7 of the handle element is made of a length approximating the razor for storage in the toilet case or kit, or within a pocket of the user's wearing apparel. When use of the razor is desired, the handle element is applied and coupled to the guard, blade, and cap assembly by engaging the coupling bushing 23 of the inner handle member 16 with the coupling stud 18 of the cap, as projected through the blade 11 and guard 10. Since the inner and outer handle members 16 and 17 are keyed together against relative rotation, the handle element, either in collapsed or extended condition, may be applied to and turned axially to screw the coupling bushing 23 onto the coupling stud 18, until the inner extremity of the inner handle member 16 abuts the under face of the guard 10 and thereupon draws home the cap 18 so as to flex and clamp the blade 11 between said guard and cap in the well-known manner. The handle element being thus operatively coupled to the guard, blade, and cap assembly, the outer handle member 17 may be drawn or slid outwardly or the inner handle member 16, or vice versa, until the tapered external surface 25 of the inner member 15 engages the tapered surface of the outer handle bore 18, thus elongating the handle element to operative size. Due to the tapers of the inner member 15 and the outer handle bore 18, when the respective tapered surfaces thereof meet the same may be strongly wedged together, and consequently a strong frictional resistance to relative collapsing movement thereof is set up, which is sufficient to hold the handle element in operative extended relation during use of the razor, which resistance, however, may be manually overcome when it is again desired to collapse the handle and disassemble the razor for storage in the carrying case C after use thereof is finished. The external contour of the outer handle member 17 may be suitably shaped to provide a desired ornamental appearance, as e.g., by forming the same an external hexagonal or other polygonal shape, or by otherwise impressing or forming thereon other ornamental embellishment.

Having now described my invention, I claim:
1. A collapsible handle element for safety razors, comprising an inner member of circular cross section externally tapered toward its inner end and an outer member having a correspondingly tapered bore of circular cross section to telescopically receive said inner member, the minor and major diameters of said tapered inner member being somewhat less than the minor and major diameters of the tapered bore of said outer member, whereby said members may be relatively telescopically extended from an initially collapsed condition until their tapered surfaces meet and bind together, said members being made of molded plastic material, said outer and inner members having cooperative means to retain the same against relative rotation, the inner end portion of said inner member having an axially disposed metallic coupling bushing imbedded therein substantially flush with its extremity, said bushing having an outwardly open internally screw-threaded socket to engage the coupling stud of a razor guard and cap assembly, whereby to stuch said handle element operatively thereto, and an end wall closing the outer end of said outer member to retain said inner member against outward escape therefrom.
2. A collapsible handle element for safety razors, comprising an inner member of circular cross section externally tapered toward its inner end and an outer member having a correspondingly tapered bore of circular cross section to telescopically receive said inner member, the minor and major diameters of said tapered inner member being somewhat less than the minor and major diameters of the tapered bore of said outer member, whereby said members may be relatively telescopically extended from an initially collapsed condition until their tapered surfaces meet and bind together, said members being made of molded plastic material, said outer member having a longitudinal keyway formed in the inner side of its wall and open toward its bore, said inner member having a laterally projecting longitudinal spline along and coincident with its length to engage in said outer member key way, whereby to prevent relative rotation of said members both in extended and collapsed positions thereof, the inner end portion of said inner member having an axially disposed metallic coupling bushing imbedded therein substantially flush with its extremity, said bushing having an outwardly open internally screw-threaded socket to engage the coupling stud of a razor guard and cap assembly, whereby to attach said handle element operatively thereto, and a closure plug affixed to and within the outer end of said outer member to retain said inner member against escape therefrom.

DANIEL C. DILLON, Jr.