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3,374,540

RAZOR

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3 Claims. (Cl. 30—62)

ABSTRACT OF THE DISCLOSURE

In a safety razor having a pair of resiliently pressed blade clamping plates, one of which forms a gripping member for coaction with a separate gripping member having a centrally disposed slot therein. The gripping members are assembled together in a lengthwise direction into a tapered socket or sleeve functioning as a handle. A bayonet-type lock or a snap or spring-type catch operates to secure the interconnection between the gripping members and the casing.

This application is a divisional application of my co-pending application Ser. No. 377,621, filed June 24, 1964, which has matured into Patent No. 3,311,975, granted Apr. 4, 1967.

The present invention relates to an improved safety razor for rigid or inflexible blades where the blades can be exchanged by means of a blade dispenser or magazine applicable from the side of the razor.

A safety razor of this type is already known to the art in which two blade clamping plates formed of metal are pressed together by means of a special leaf spring, so that the single-edge blade is fixedly clamped. The exchange of the blade occurs in such a manner that, a protruding portion of the blade dispenser is introduced laterally or from the side between both of the blade clamping plates and a new blade from the dispenser is pushed-in by means of a slider, whereby the old blade moves out of the razor apparatus from the other side. Since this type razor is not capable of being disassembled a thorough cleaning of the same is therefore not possible, and after a short time the razor itself becomes unsightly. This is of disadvantage also for hygienic reasons.

Accordingly, it is an important object of the present invention to provide an improved razor which overcomes these disadvantages.

Another important object of the present invention relates to the provision of an improved safety razor which is relatively simple in construction, permits insertion and removal of the new and old blade respectively, in a very easy way, permits disassembly of the razor components so that cleaning thereof is readily possible, as well as being economical to manufacture and easy to service and handle.

Characteristic of the razor of the present invention is that there is provided two blade clamping plates formed of synthetic material, that is plastic, wherein the blades are held between a rigid and a resiliently pressed blade clamping plate, these blade clamping plates being provided with a respective gripping component which, when assembled, collectively form a tapered socket, with such gripping components being held together in their mutual position by means of a casing or housing sleeve.

One of the major advantages of the present invention resides in the fact that the safety razor can be disassembled by removal of a gripping component, more specifically, by removing the casing serving as a handle. A special spring for fixedly clamping the blade is not necessary since one blade clamping plate is constructed to be

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self-springy. Additionally, the manufacture from plastic represents a considerable saving in costs.

In accordance with a preferred embodiment of the invention the resiliently pressed blade clamping plate is provided with recesses for the purpose of producing a spring action. The resiliently pressed blade clamping plate can also be constructed as a separate element and can be subjected to the spring action of a separate gripping member or component provided with recesses. For this purpose, there can be provided in the resilient blade clamping plate or in the separate gripping member one or more lateral slots and one or more centrally disposed slots. As a result, in the pre-stressed or biased condition there appears a deformation of the slots. The gripping components or members are, for example, assembled together in the lengthwise direction into a tapered socket or sleeve, held together by means of a casing means provided with an inner cone or inside taper. In order to secure the interconnection between the gripping components and the casing means it is possible to employ a thread-type lock, a bayonet-type lock or a snap or spring-type catch or lock. In order to be able to achieve an automatic pressing together of the blade clamping plates the one clamping plate can bear with an inclined surface against an appropriate surface of the other clamping plate. The inclined surfaces are advantageously located within the gripping components and are pressed against one another by means of the casing means.

In order to reduce wear it is recommended to provide the blade clamping plates with a bearing or support plate formed of metal. It is possible to apply to the support plate hooks serving as support means for the cutting edge of the razor blades. For example, the support plate can be form-lockingly connected with one of the blade clamping plates. It can be connected to pins of the aforesaid one blade clamping plate and by means of flexed portions can laterally engage over such clamping plate. Between both of the blade clamping plates there can be located a slot for introducing an insert portion or element operably connected with the blade dispenser or magazine. Furthermore, one blade clamping plate can possess a lateral shoulder or projection into which a slot of the other clamping plate can be pushed thereinto. It has been shown to be advantageous to provide the casing, serving as a handle, with knurls or grooves at its external surface or face for the purpose of ensuring positive handling.

Other features, objects and advantages of the invention will become apparent by reference to the following detailed description and drawings in which:

FIGURE 1 illustrates a further embodiment of inventive safety razor in side view;

FIGURE 2 is a side view of a separate blade clamping plate;

FIGURE 3 is a cross-sectional view of the separate blade clamping plate depicted in FIGURE 2;

FIGURE 4 is a front view of a gripping member or element employed in the razor of FIGURE 1; and

FIGURE 5 is a side view of the gripping member depicted in FIGURE 4.

Describing now the drawings and, with particular attention initially directed to the embodiment depicted in FIGS. 1 to 5, it will be seen that the safety razor shown in FIG. 1 incorporates a fixed or rigid blade clamping plate 27 formed of a single piece and a movable blade clamping plate 28 cooperating with the aforesaid blade clamping plate 27. The blade clamping plate 28 is angle-shaped and is mounted in a recess or groove 29 of the rigid blade clamping plate 27. A support or brace element 30 is provided in order to fixedly clamp the blade clamping plate 28. This support or brace element 30 incorporates a transfer or transition plate having a tapered portion 31 possessing a recess or slot 32 and which runs out into

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a conical gripping portion 33. The rigid blade clamping plate 27 is likewise provided with a conical gripping portion 34. The gripping portions 33 and 34 are held together by means of the conical casing 35 provided with an inside hollow taper or cone 35a. On the external surface of the casing means 35 which serves as a handle there are provided knurls or suitable grooves in order to ensure for a positive handling and holding of the razor. The gripping component formed by transfer plate 31 and the gripping portion 33 is constructed as a separate member.

A transverse or lateral slot 29 is located between the blade clamping plates 27 and 28 spaced at this location and serving to permit introduction of an insert portion of the blade dispenser or magazine. This insert portion, not shown in the drawing, is constructed such that when it is introduced into the transverse slot 29 the clamping plates 27 and 28 are resiliently spread apart and release the blade 3. Due to the lateral pushing-in of a new blade from the dispenser the old blade is removed. After withdrawing the insert portion of the blade dispenser from the razor the blade 3 is again fixedly clamped.

In order to prevent rapid wear of the bearing or support surface of the blade clamping plate 28, such is advantageously provided with a support or bearing plate 20 having apertures or holes 21a and 22a which seat upon pins 21 and 22 respectively, of the blade clamping plate 28, in order to form-lockingly connect such support blade 20 therewith. At the forward end of the support plate 20 there are located hooks 24 which protect the blade cutting edge against falling out and against protruding too much towards the front. An opening or passage 26 is located beneath the blade cutting edge at the blade clamping plate 28 and which serves the purpose of ensuring that such cutting edge is freely exposed.

The mutual position of the gripping portions 33 and 34 is ensured for by virtue of a conical shoulder or projection 36 cooperating with a complementary opening or recess 37 provided in the gripping portion 33. Furthermore, arresting of the gripping portions 33, 34 in their desired position is ensured for in that a stop button or knob 38 of the gripping portion 33 snaps into an opening 39 of the knurled casing means or housing 35, to provide a snap-type lock. The release of the arresting action takes place by pushing-in the knob 38, whereby the resilient arm 40 of the gripping portion 33 resiliently retracts into the recess 41 provided for this purpose and moves into the connecting recess or inner compartment 42 of the gripping portion 34 shown in dotted lines.

While there is shown and described present preferred embodiments of the invention it is to be distinctly understood that the invention is not limited thereto but may be otherwise variously embodied and practiced within the scope of the following claims.

What is claimed is:

1. An injector-type safety razor of molded synthetic plastic, including: an elongated handle, a longitudinal hollow in said handle communicating with one end thereof, a stiff first member defining at one end a clamping plate for a blade and at the other end an elongated member for removable insertion in said hollow, means defining a blade seat and a flat surface for the seat, first means defining two ends, one end including an extension that is elastic at least in the directions transverse and perpendicular to said flat surface for resiliently urging said blade seat against said first member, whereby to hold a blade therebetween and for permitting insertion of the key of a blade injector magazine, and the other end defining an elongated member for insertion in said hollow, second means including a lateral projection on one of said elongated members and a cooperating recess on the other of said elongated members to insure the correct orientation of said elongated members with respect to one another in the hollow, means defining an opening in said handle communicating with said hollow for orienting said two elongated members with respect

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to said handle and removably locking them within the hollow, button means associated with one of said elongated members for engaging said opening, one elongated member including a flexible portion of reduced thickness for movement within said hollow and carrying said button, a metal bearing plate on the surface of said means defining a blade seat, means for orienting and securing the plate, and means on the plate for holding the blade in place.

2. An injector-type safety razor of molded synthetic plastic including: an elongated handle, a longitudinal hollow in said handle communicating with one end thereof, a stiff first member defining at one end a clamping plate for a blade and at the other end an elongated member for removable insertion in said hollow, means defining a blade seat, a second member defining two ends, one end including an elastic extension for resiliently urging said blade seat against said first member and the other end defining an elongated member for insertion in said hollow, a lateral projection on one of said elongated members and a cooperating recess on the other of said elongated members for orientating said members with respect to one another in said hollow, an opening in said handle communicating with said hollow for orientating said elongated members with respect to said handle and removably locking them within said hollow, button means associated with one of said elongated members for engaging said opening, one elongated member including a flexible portion of reduced thickness for movement within said hollow and carrying said button, a metal bearing plate on the surface of said means defining a blade seat, means for orienting and securing said plate, and means on said plate for holding the blade in place.

3. An injector-type razor of molded synthetic plastic, including: an elongated handle, a longitudinal hollow in said handle communicating with one end thereof, a first member defining at one end a clamping plate for a blade and at the other end an elongated member for removable insertion in said hollow, means defining a blade seat, a second member resiliently urging said blade seat against said first member and having at one end an elongated member for insertion in said hollow, a lateral projection on one of said elongated members and a cooperating recess on the other of said elongated members for orientating said members with respect to one another in said hollow, means defining an opening in said handle communicating with said hollow for removably locking said elongated members within said hollow, button means associated with one of said elongated members for engaging said opening, one elongated member including a flexible portion of reduced thickness for movement within said hollow and carrying said button, a metal bearing plate on the surface of said means defining a blade seat, means for orienting and securing said plate, and means on said plate for holding the blade in place.

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