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 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 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 provided to cover 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 fixed 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 pressed 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 is a side view of a first embodiment of inventive safety-razor, with a portion of the casing removed in order to expose the internal construction;

FIGURE 2 illustrates a front view of the resilient or elastic blade clamping plate;

FIGURE 3 is a fragmentary cross-sectional view of the casing means;

FIGURE 4 is a top plan view of the support or bearing plate;

FIGURE 5 is a side view of the support or bearing plate depicted in FIGURE 4;

FIGURES 6, 7, 8 and 9 depict a portion of modified resilient blade clamping plates possessing different forms of slots.

Describing now the drawings and, with particular attention initially directed to the embodiment depicted in FIGURES 1 to 5, it will be seen that the safety-razor shown in FIGURE 1 incorporates a rigid blade clamping plate 1 and a resilient or flexible blade clamping plate 2, between both of which there is fixedly clamped the relatively rigid or stiff razor blades 3. The plate 2, at its upper part neighboring the blade, acts as a seat for the blade and defines a flat surface. The clamping plates 1 and 2 formed of plastic include tapered portions 4 and 5 respectively, which each ease are integral with a respective half-conical gripping portion 6 or 7 respectively. The respective tapered portions 4 and 5 together with their associated gripping portions 6 and 7 respectively, provide gripping components.

The blade clamping plates 1 and 2 are held together at their gripping portions 6 and 7 respectively, by means of casing means 8 provided with an inside taper or cone 9 and conveniently serving as a handle. The lower end of the gripping portion 7 bears by means of an inclined surface 10 against a similar surface 11 of the other gripping portion 6, whereby the first gripping portion 7 has imparted to it a force in the direction of the arrow 12 and thereby fixedly clamps the razor blade 3. It will further be seen that at the external surface 13 of the casing means 8 there are provided knurls or suitable grooves in order to ensure for a positive handling and holding of the razor.

In order to lock the portions 6 and 7, there is further provided a safety or securing mechanism in the form of a pin 14 arranged at the gripping portion 6 which engages in a threading or threaded portion 15 of the casing means 8, thereby providing a thread-type lock. By virtue of turning the casing means 8 the gripping portions 6 and 7 are pulled into the inner cone or taper 9 of the casing means 8, with opposite rotational movement such are pushed-out of such casing means.

The tapered portion 5 exhibits lateral slots 16 and 17 and a substantially central closed slot 18. Due to this physical construction the elasticity of the tapered portion 5 is increased. It is thus permitted to bend and flex transversely to the said flat surface defined by the upper part of plate 2—that is, to move forward in the view of FIGURE 1—and also perpendicularly to the plane. In the clamped condition the slots 16, 17 and 18 are deformed, so that they approximately assume the form depicted in phantom lines in FIGURE 2.

A transverse or lateral slot 19 is located between the blade clamping plates 1 and 2 spaced at this location and serving to permit introduction of an insert portion or key 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 19 the clamping plates 1 and 2 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 is again fixedly clamped.

In order to prevent rapid wear of the bearing or support surface of the blade clamping plate 2, such as adventiously provided for the blade clamping plate 20 having apertures or holes 21a and 22a which seat upon pins 21 and 22 respectively, of the blade clamping plate 2, in order to form-loklyngly connect such support plate 20 therewith. This support plate 20 is further provided with flexed portions 23 which laterally engage over the after said blade clamping plate 2. At the forward end of the support plate 20 there are located hooks 24 and 25 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 2 and which serves the purpose of ensuring that such cutting edge is freely exposed.

Further possibilities for providing the tapered portion 5 with slots are depicted in FIGURES 6 to 9. More specifically, FIGURE 6 illustrates an embodiment which is quite similar to FIGURE 2, yet the central slot 18a is provided with substantially parallel confronting faces 18b. Also, the diametrically opposed ends 5a of the tapered portion 5 are rounded and merge with a narrower leg portion 5b. In FIGURE 7, the transfer or tapered portion 5 is only provided with lateral or side slots 50 and 51 formed by the support or bearing portion 52 and 53 formed by the substantially Z-shaped arranged webs or legs 50a, 50b, 51a, 51b, 52a, and 52b. In the embodiment of FIGURE 8 there is provided for the tapered portion 5 a considerably larger central closed slot 54, so that only thin webs 55 remain, in order to obtain a softer spring. It will also be seen that, in this instance, there are also present the lateral slots 54 and 55. In FIGURE 9 the tapered portion 5 is provided with a single, closed central slot 56.

While there is shown and described a preferred embodiment 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 associated with said elongated members to ensure their correct orientation in said hollow; third means associated with said handle for orienting said two elongated members, with respect to said handle and removably locking them within the hollow; fourth means associated with one of said elongated members for cooperating with said means; a metal bearing plate on the surface of said means; means for orienting and securing the plate; and means on the plate for holding the blade in place.

2. The razor of claim 1, wherein the elastic extension of said first means includes at least one slot transverse to said first means for ensuring the elasticity; said hollow tapers towards the end of the handle remote from the blade end of the razor, said elongated members also being tapered; said second means includes a flat surface associated with each of said elongated members, said surfaces bearing on one another when the elongated members are inserted in the hollow; and wherein the flat surface of the elongated member of said first member terminates in an inclined surface extending outwardly and downwardly from the flat surface; and the flat surface of the elongated member of said first means terminates in an inclined surface mating with the other inclined surface; said hollow tapers towards the end of the handle remote from the blade end of the razor, said elongated members also being tapered, the tapers of the elongated members and of the hollow cooperating to push said inclined surfaces against one another and to force said first means to move in the direction of the blade; and said fourth means engages in said third means to prevent longitudinal movement of said two elongated members in said handle.

3. The razor of claim 2, wherein said hollow is substantially round in cross section and said third means is a thread in said hollow inclined to the longitudinally axis thereof and said fourth means is a pin for engaging said thread.

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