

[54] **DUAL RAZOR BLADE ASSEMBLY**
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[73] Assignee: **The Gillette Company, Boston, Mass.**
[22] Filed: **Mar. 15, 1971**
[21] Appl. No.: **124,068**

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Primary Examiner—Othell M. Simpson
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[52] U.S. Cl. 30/47, 30/50, 30/75, 30/84
[51] Int. Cl. B26b 21/06, B26b 21/22
[58] Field of Search.....30/47, 32, 50, 83, 84, 75, 30/64

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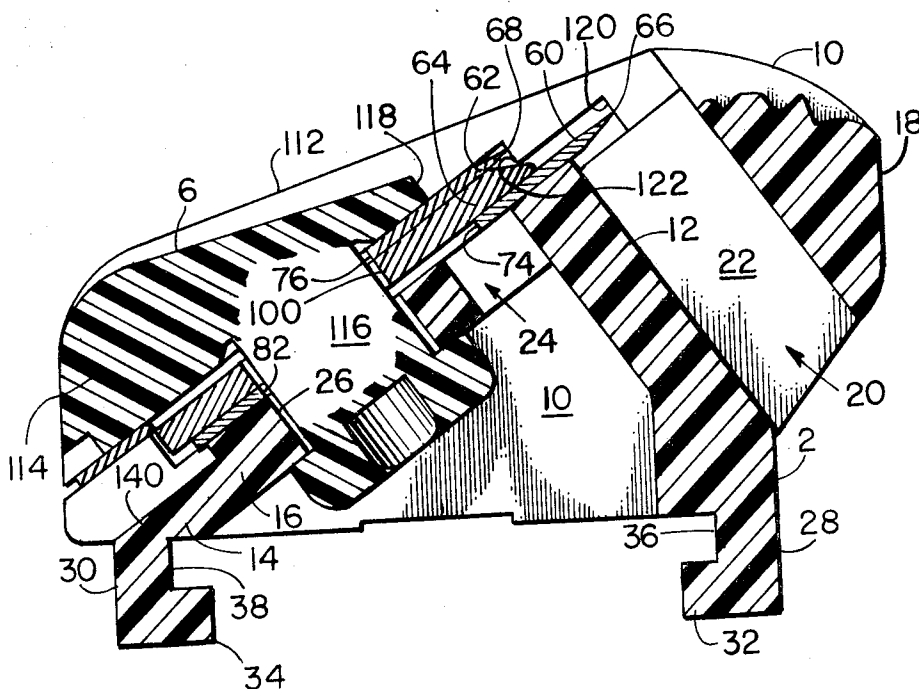
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[57] **ABSTRACT**

A razor blade assembly including a platform member connected to a cap member with blade means disposed therebetween. The blade means comprises a plurality of blade members having cutting edges extending in the same direction, whereby in a shaving operation all the cutting edges are utilized substantially simultaneously.

20 Claims, 4 Drawing Figures



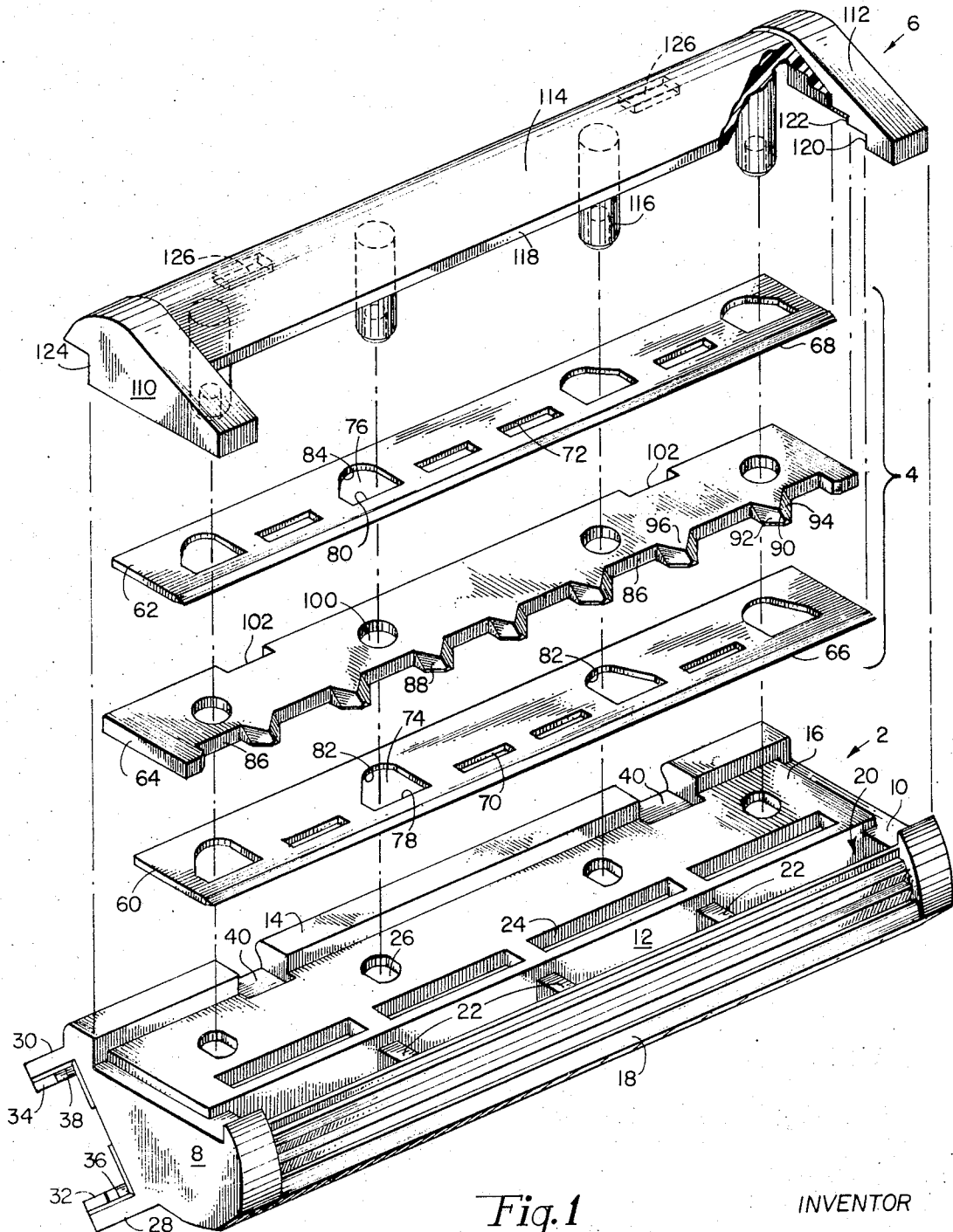


Fig. 1

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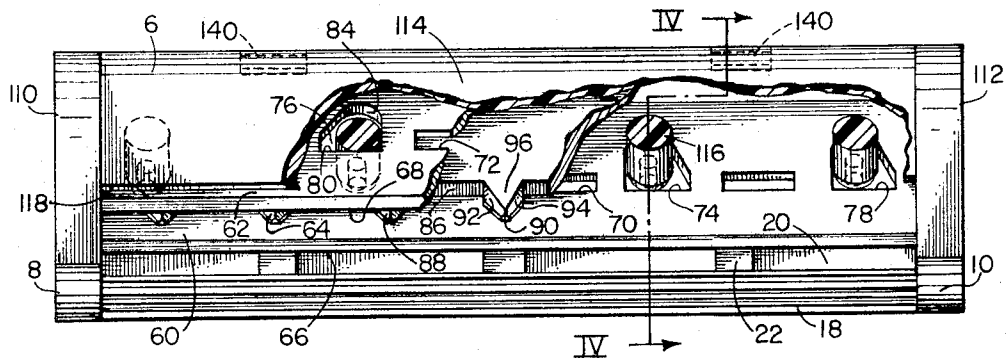


Fig. 2

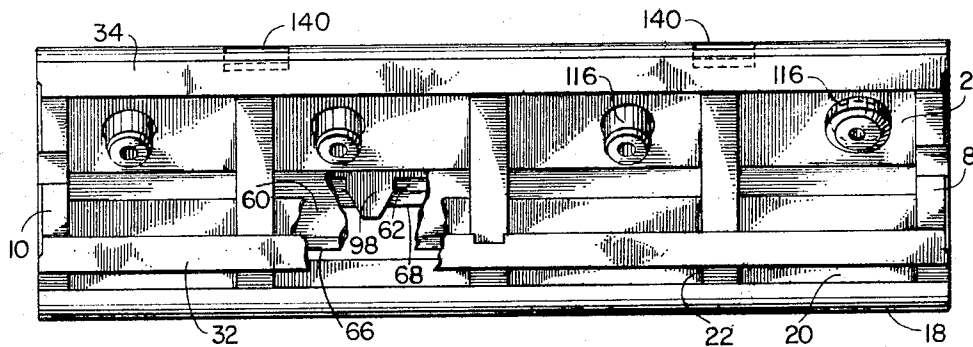


Fig. 3

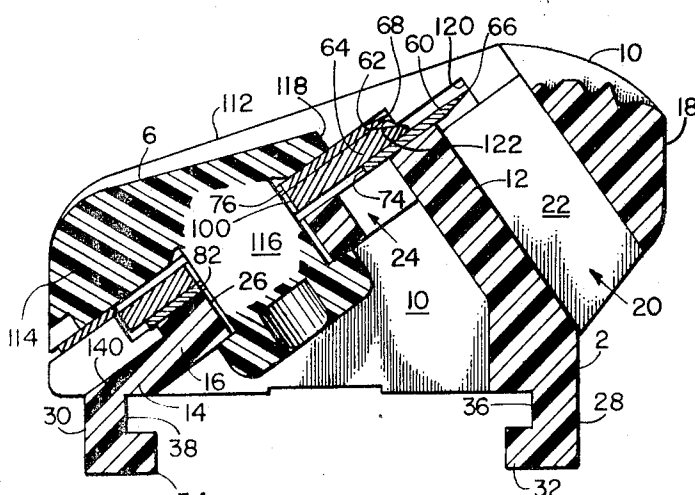


Fig. 4

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DUAL RAZOR BLADE ASSEMBLY

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to razors and is directed more particularly to a razor blade assembly including a plurality of razor blades.

2. Description of the Prior Art

Recently, there have evolved razor head units having blade means and molded plastic head means as one unit which may have a handle molded thereto or which may be adapted for connection to a separate handle means. For example, U.S. Pat. No. 3,488,764, issued Jan. 6, 1970, discloses blade means molded into a disposable unit which may constitute either a razor head or a complete razor, including handle.

Embedding blade means in molten plastic has presented some manufacturing problems not encountered in the more conventional blade arrangement in which a razor blade is clamped between a platform member and a cap member or members. While the disposable blade and head unit is desirable, it is more economical to mechanically lock the blade means between pre-molded members. Also, it has been noted that certain advantages result from using in shaving operations two or more cutting edges applied to the surface of the skin more or less simultaneously.

SUMMARY OF THE INVENTION

An object of the present invention is therefore, to provide a razor head unit similar to that disclosed in the above-mentioned patent, but in which the blade means is supported by a platform member and cap member and economically and permanently sealed therebetween.

A further object is to provide such a razor head unit, or assembly, in which the blade means comprises a plurality of blade members having their cutting edges extending in the same direction.

With the above and other objects in view, as will hereinafter appear, a feature of the present invention is the provision of a razor blade assembly including a platform member, razor blade means disposed on the platform member, and a cap member connected to the platform member with the blade means disposed therebetween. The blade means comprises first and second planar blade members having respectively first and second cutting edges extending in the same direction. The assembly is provided with groove means adapted to slidably receive a complementarily shaped portion of a razor handle.

The above and other features of the invention, including various novel details of construction and combinations of parts, will now be more particularly described with reference to the accompanying drawings and pointed out in the claims. It will be understood that the particular device embodying the invention is shown by way of illustration only and not as a limitation of the invention. The principles and features of this invention may be employed in various and numerous embodiments without departing from the scope of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Reference is made to the accompanying drawings in which is shown an illustrative embodiment of the invention from which its novel features and advantages will be apparent.

FIG. 1 is an exploded perspective view of one form of razor assembly illustrative of an embodiment of the invention;

FIG. 2 is a top plan view;

FIG. 3 is a bottom plan view;

FIG. 4 is a sectional view taken along line IV—IV of FIG. 2.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawings and particularly to FIG. 1, it will be seen that the components of the illustrative assembly include a platform member 2, blade means 4, and a cap member 6.

The platform member 2 includes end walls 8, 10 interconnected by a front wall 12, a back wall 14, and a ramp 16. The end walls 8, 10, extend forwardly beyond the front wall 12 and are further interconnected by a guard member 18 which extends parallel to but is removed from the front wall 12, forming therebetween a slot 20. Support walls 22 extend from the front wall 12 to the guard member 18 and further support the guard member. The ramp 16 is provided with slot means 24 extending parallel to the slot 20 but spaced rearwardly therefrom. The ramp is further provided with hole means 26 which facilitate assembly of the unit, as will be described in detail below. The platform is provided with wall extensions 28, 30 which extend downwardly from the front and back walls 12, 14, respectively. The wall extensions 28, 30 are provided on their free edges with inwardly extending flanges 32, 34 which form parallel opposed grooves 36, 38 adapted to receive runner means of a razor handle, such as for example, a razor handle of the type disclosed in U.S. Patent application Ser. No. 124,216, filed March 15, 1971, in the name of Roger L. Perry. The back wall 14 is provided with openings 40 which provide accessibility to the blade means when the unit is assembled, as will be described below. The platform member 2 is preferably molded as an integral rigid plastic member.

The blade means 4 includes a first blade member 60 and a second blade member 62, with a spacer member 64 therebetween for providing desired spacing between the first and second blade members. The blade members 60, 62 are provided with cutting edges 66, 68, respectively, which extend in the same direction, or forwardly, generally towards the guard member 18. The blade members are also provided with a series of axially aligned slots 70, 72, which, in effect, form on each blade member an interrupted slot extending parallel to but removed rearwardly from the cutting edge. The blade members are further provided with hole means 74, 76 which are defined by forward straight edges 78, 80 and back edges 82, 84 having a curvature generally complementary to the curvature of the hole means 26 of the platform member ramp 16. The particular configuration of blade hole means 74, 76 facilitates assembly of the various components and particularly location of the blade members. The hole

means 74, 76, in addition, contribute to and form part of the slot networks 70, 72. The spacer 64 has a recessed forward edge 86 from which extend forwardly directed fingers 88. Each of the fingers culminates in a forward edge 90 defined by surfaces 92, 94 which extend rearwardly and outwardly towards the spacer forward edge 86. The surfaces 92, 94 also extend inwardly, from the bottom surface of the spacer to the top surface of the spacer, so that a top surface 96 of each finger is smaller than the corresponding bottom surface 98 of that finger. The spacer member is further provided with hole means 100 alignable with previously mentioned hole means 26, 74, and 76, and with recesses 102 alignable with the previously mentioned recesses 40. The blade members 60, 62 and the spacer 64 are preferably of metal.

The cap member 6 includes end walls 110, 112 interconnected by a clamp portion 114. Pin means 116 extend downwardly from the clamp portion and are alignable with the hole means 76, 100, 74 and 26. The pins may be hollow at their free ends, as shown in FIGS. 1, 3 and 4, to facilitate staking, as will be further described below. The end walls 110, 112 extend further forwardly than a forward edge 118 of the clamp portion 114 and have on their inwardly facing sides notches 120, 122 in stepped relationship, the notches being for the purpose of fixing the positions of the blade members 60, 62 in assembly of the unit, as will be described in detail below. The clamp portion 114 and end walls 110, 112 cooperatively define an elongated recess 124 adapted to receive the back wall 14 of the platform member 2. The clamp portion 114 is further provided with recesses 126 alignable with the recesses 102 of the blade means spacer 64 and the recesses 40 of the platform member.

Referring to FIGS. 2-4, it will be seen that in assembly the first blade means 60 is disposed upon the ramp 16 with the cutting edge 66 located over the slot 20. The first blade means 60 is so disposed upon the ramp 16 that the back edges 82 of the hole means 74 are aligned with the hole means 26 of the ramp 16. The hole means 26 may be slightly elongated, as illustrated in FIG. 1, to permit some laxity in manufacturing tolerances but also permit true alignment of the various components. The slots 70 are thereby located proximate to the slots 24 providing a passageway from the upper surface of the first blade member 60 through the assembled unit.

The spacer 64 is disposed on the upper surface of the first blade means 60, the hole means 100 being generally aligned with the rearward edge 82 of the hole means 74 and further aligned with the hole means 26, the recesses 102 being aligned with the recesses 40. The fingers 88 of the spacer 64 extend forwardly toward the cutting edge 66 but are removed from the edge 66 and exercise a clamping function with respect to the first blade means. The shape of the fingers 88 facilitate flow of shaving debris to the slots 70.

The second blade member 62 is located on the upper surface of the spacer, the forward edges 80 of the hole means 76 being aligned with the hole means 100 and 26, the second cutting edge 68 being thereby positioned rearwardly of the first cutting edge 66 and rearwardly of the forwardmost reach of the fingers 88. The second cutting edge 68 is further positioned proximate to the slots 70 of the first blade member.

The cap member 6 is disposed on the upper surface of the second blade member 62, the end walls 110, 112, engaging the platform end walls 8, 10 and the pin means 116 extending through the hole means 76, 100, 74 and 26. The recesses 126, 102 and 40 are combined to form openings 140 in the assembly, by way of which the blade means may be reached.

In practice, it is preferable to loosely assemble the various components. A tool (not shown) is then inserted through the openings 140 to engage the first and second blade members 60, 62 and urge them forwardly. The blade members are thereby moved forwardly until the cutting edge 68 of the second blade member 62, at either end thereof, engages the notches 122, and the cutting edge 66 of the first blade member 60 engages the notches 120. The assembly is then more tightly compressed and the free ends of the pin means 11 expanded (FIG. 3, extreme right pin, and FIG. 4 illustrating) to connect the cap member 6 to the platform member 2, with the blade means clamped firmly therebetween.

It will be noted that the blade members 60, 62 are identical and need not be segregated in the manufacturing process, thereby simplifying storage and handling.

In the assembled unit, the cutting edge 66 of the first blade member 60 is located proximate to the slot 20 and the cutting edge 68 of the second blade member 62 is recessed relative to the first blade member cutting edge and is located proximate to the slots 70 and unobstructed portion of the holes 74. Thus, there is a ready escape passage proximate to each cutting edge for the flow of accumulated lather and the like.

It is to be understood that the present invention is by no means limited to the particular construction herein disclosed and/or shown in the drawings, but also comprises any modifications or equivalents within the scope of the disclosure.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. Razor blade assembly comprising a platform member of plastic material, blade means, cap means of plastic material, said cap means including a forwardly extending projections at each end thereof with an aligning surface in each of said projection, said blade means being disposed between said platform member and cap means, said blade means including a plurality of planar blade members, each said blade member having a sharpened cutting edge, said aligning surfaces receiving the cutting edge of one of said blades in engagement therewith and said cutting edges being parallel and extending in the same direction to permit simultaneous hair cutting engagement adjacent the skin of an operator, and means permanently securing said platform member, blade means and cap means together as a unit.

2. The invention according to claim 1 and further including a spacer member disposed between adjacent blade members.

3. The invention according to claim 2 in which said spacer member includes a plurality of spaced fingers extending in the direction that said cutting edges face.

4. The invention according to claim 3 in which each of said fingers comprises a forward edge defined by wall surfaces extending rearwardly and outwardly

toward a forward edge of the spacer, a planar top surface comprising an extension of one surface of said spacer member, and a planar bottom surface comprising an extension of a second surface of said spacer member, said top surface of said finger having an area less than the area of said bottom surface of said finger.

5 The invention according to claim 1 in which said platform member includes a front wall portion and a guard portion extending parallel to said wall portion but removed therefrom to form a slot therebetween, said first cutting edge extending to a point over said slot, and said second cutting edge extending to a point short of said slot.

6 The invention according to claim 5 in which said platform member is further provided with an opening, and said first blade member is provided with an unobstructed opening in alignment with said platform member opening.

7. Razor blade assembly comprising a platform member of molded plastic material including a guard, blade means, and a cap member of molded plastic material, said blade means being disposed between said platform member and said cap member, said blade means including first and second planar blade members, each said blade member having a sharpened cutting edge, said blade members being disposed in parallel planes and said cutting edges being parallel and facing in the same direction to permit simultaneous hair cutting engagement adjacent the skin of an operator, the first of said blade members being in engagement with said platform member, the second of said blade members being in engagement with said cap member, a spacer member disposed between said first and second blade members, said spacer member including a plurality of spaced fingers extending in the direction that said cutting edges face, cutting edge engagement means on one of said molded members for positioning said cutting edges parallel to said guard, and means permanently securing said platform member, blade members, spacer member and cap member together as a unit, said razor blade assembly including attachment means for releasably attaching said razor blade assembly to a razor handle.

8. The invention according to claim 7 in which the second cutting edge is recessed relative to said first cutting edge.

9. The invention according to claim 7 in which said platform member is provided with an opening and said first blade member is provided with an unobstructed opening aligned with said platform opening whereby to provide a passage from between said first and second blade members through said platform member.

10. The invention according to claim 9 in which said platform member is provided with a front wall portion and a guard portion extending parallel to said front wall portion but spaced therefrom to define a slot extending through said platform member.

11. The invention according to claim 10 in which said second cutting edge is recessed relative to said first cutting edge, said first cutting edge being disposed proximate to said slot, and said second cutting edge being disposed proximate to said passage.

12. Razor blade unit comprising a platform member of molded plastic material, blade means having openings therein, and a cap member of molded plastic

material having pins extending downwardly therefrom and extending loosely through said openings, said blade means being disposed between said platform member and said cap member, said blade means including first and second planar blade members, each said blade member having a sharpened cutting edge, and a spacer member disposed between said first and second blade members to position said planar blade members parallel to one another, said unit having aperture means exposing another edge of said blade means from outside the platform and cap members, whereby said blade means may be moved relative to said pins to be properly positioned within said unit during assembly of said unit, means including said pins permanently securing said platform member, blade members, spacer member and cap member together as a rigid unit, and attachment means for releasably attaching said razor blade unit to a razor handle.

13. The invention blade unit according to claim 12 in which said cap member has notches therein respectively to receive portions of said cutting edges, whereby to facilitate positioning of said blade members in said unit during assembly of said unit.

14. A razor blade unit comprising a first member of molded plastic material, said first plastic member defining a surface for receiving a blade member, a front wall surface and a guard portion extending parallel to said wall surface but spaced therefrom to define a slot,

a first planar blade member having a sharpened cutting edge, said first planar blade member being disposed on said blade receiving surface with its cutting edge above said slot, and extending parallel to said guard portion,

a spacer member on said first blade member, a second planar blade member having a sharpened cutting edge, said second planar blade member being disposed on said spacer member with its cutting edge parallel to and offset rearwardly from the cutting edge of said first blade member,

a second member of molded plastic material disposed on said second blade member, cutting edge engagement means on one of said molded members for positioning said cutting edges parallel to one another and to said guard portion,

means permanently securing said first plastic member, said blade members, said spacer member and said second plastic member together in fixed, geometrical relationship as a substantially rigid unit,

and attachment means integral with said plastic members for releasably attaching said razor blade unit to a razor handle.

15. The blade unit according to claim 14 in which said spacer member includes a plurality of spaced fingers extending in the direction that said cutting edges face.

16. The blade unit according to claim 15 in which each of said fingers comprises a forward edge defined by wall surfaces extending rearwardly and outwardly toward a forward edge of the spacer, a planar top surface comprising an extension of one surface of said spacer member, and a planar bottom surface comprising an extension of a second surface of said spacer member, said top surface of said finger having an area less than the area of said bottom surface of said finger.

17. The blade unit according to claim 14 in which said first plastic member is further provided with an opening, and said first blade member is provided with an unobstructed opening in alignment with said first plastic member opening.

18. The blade unit according to claim 14 wherein one of said plastic members includes structure defining a plurality of spaced openings, and said spacer member includes a plurality of spaced forwardly extending fingers, said fingers being located so that the spaces between said fingers are aligned with the openings in said one plastic member to provide a series of flow paths for removal of shaving debris from between the cutting edges of said first and second blade members.

19. A razor blade unit comprising a first member of molded plastic material, said first plastic member defining a surface for receiving a blade member, a front wall surface and a guard portion extending parallel to said wall surface but spaced therefrom to define a slot,

a first planar blade member having a sharpened cutting edge, said first planar blade member being disposed on said blade receiving surface with its cutting edge above said slot, and extending parallel to said guard portion,

a spacer member on said first blade member,

a second planar blade member having a sharpened cutting edge, said second planar blade member being disposed on said spacer member with its cutting edge parallel to and offset rearwardly from the cutting edge of said first blade member,

a second member of molded plastic material disposed on said second blade member, said

second plastic member having a forwardly extending projection at each end thereof, first and second aligning surfaces in each said projection, said first aligning surfaces receiving portions of the cutting edge of said first blade member and said second aligning surfaces receiving portions of the cutting edges of said second blade member, whereby to facilitate positioning of said blade members in said unit during assembly of said unit, one of said plastic members including structure defining a plurality of spaced openings, and said spacer member includes a plurality of spaced forwardly extending fingers, said fingers being located so that the spaces between said fingers are aligned with the openings in said one plastic member to provide a series of flow paths for removal of shaving debris from between the cutting edges of said first and second blade members,

and means permanently securing said first plastic member, said blade members, said spacer member and said second plastic member together in fixed, geometrical relationship as a substantially rigid unit.

20. The blade unit according to claim 19 wherein said unit has opening means therein by way of which said first and second blade members and said spacer member are made accessible from outside said first and second plastic members, whereby said first and second blade members and said spacer member may be properly positioned within said unit during assembly of said unit.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,724,070 Dated April 3, 1973

Inventor(s) Francis W. Dorion, Jr.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 4, line 46, "projections" should be
--projection--;

Column 4, line 47, "projection" should be
--projections--;

Column 6, line 20, delete "invention".

Signed and sealed this 19th day of February 1974.

(SEAL)
Attest:

EDWARD M. FLETCHER, JR.
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents