

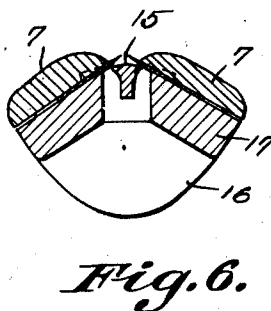
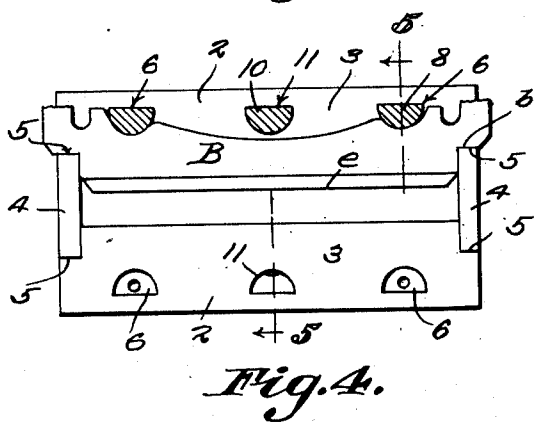
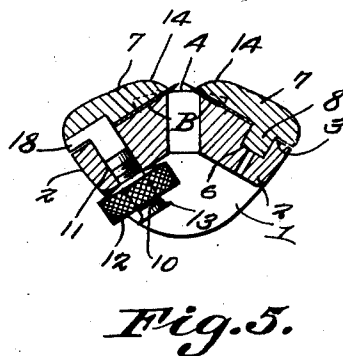
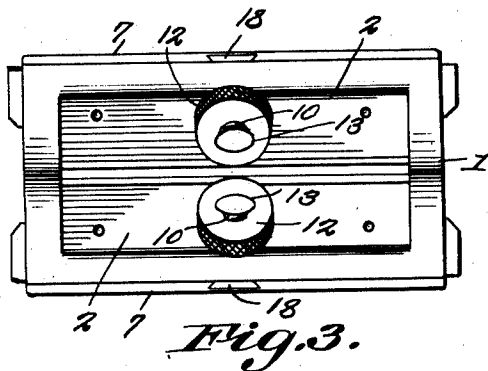
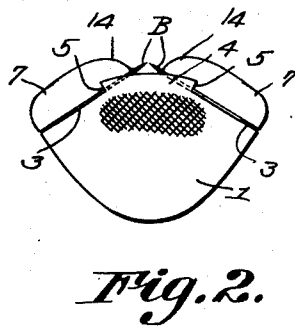
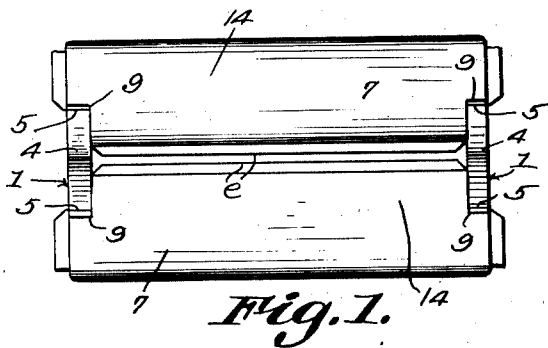
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2,361,921

SAFETY RAZOR

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UNITED STATES PATENT OFFICE

2,361,921

SAFETY RAZOR

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7 Claims. (Cl. 30—50)

This invention relates to safety razors, one of the objects being to provide a light, durable and efficient article which does not require the use of a handle such as commonly employed but can be gripped easily between the thumb and finger by the user and moved back and forth over the surface to be shaved without change in position of the razor relative to said surface.

Another object is to provide a safety razor which can be molded of plastic if so desired.

A still further object is to provide a safety razor having cutting edges in close proximity to each other, said edges being provided by half sections of ordinary double-edge blades.

Another object is to provide a safety razor which does not require the use of a guard adjacent to the cutting edges although a guard can be employed if desired.

A still further object is to provide a safety razor so constructed that the blade members can readily be placed in and removed from position without danger of cutting the user and can be quickly gripped and released without necessitating the separation of any of the parts from each other.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

In the accompanying drawing the preferred form of the invention has been shown.

In said drawing

Figure 1 is a plan view of the safety razor.

Figure 2 is an end elevation.

Figure 3 is a bottom view.

Figure 4 is a top plan view of the razor with the two clamping plates and one blade removed, the lugs of one of the removed clamping plates being shown in section and a blade being shown in position thereagainst.

Figure 5 is a section through the complete razor taken substantially on the line 5—5, Figure 4.

Figure 6 is a transverse section through a slightly modified form of razor.

Referring to the figures by characters of reference, 1 designates the end portions of the body of the razor. These can be of any shape desired and are connected by parallel bars 2 preferably integral therewith and the top faces of which occupy planes which converge to a line extending

longitudinally of the body. These faces have been indicated at 3 and constitute seats for razor blades B as hereinafter explained.

Each of the ends 1 has a wing 4 extending upwardly from the middle portion thereof and above the level of the faces 3 so as to provide stop shoulders 5. Recesses 6 are provided in each bar 2 and open upwardly through the face 3.

Associated with each of the bars 2 is a clamping plate 7 proportioned to overlie a blade B when placed on bar 2 and having small lugs 8 located where they will enter the recesses 6 and thus form stops for limiting the movement of the engaged blade in one direction. Each clamping bar is preferably recessed at its ends, as shown at 9 so as to extend between and fit against the wings 4 and also to lap and engage the shoulders 5. This will be apparent by referring to Fig. 1.

Threaded studs 10 are extended from the respective plates 7 and are located where they can be inserted into openings 11 provided within the bars 2 and each of these studs has a nut 12 or other holding means mounted thereon. The nut can be prevented from being completely removed from the stud by enlarging or offsetting the free end of the stud as shown for example at 13.

The blades to be used in connection with said razor can be formed from several well known designs of double-edged safety razor blades. These latter blades, in order to adapt them to various types of safety razors, are all provided with longitudinal slots separating each blade into two halves joined solely by narrow portions at the ends thereof. By breaking a razor blade longitudinally through these end portions, two one-edge blades are provided and these constitute the blades which can be used in connection with the present razor. The general outline of one of the blades thus prepared has been indicated at B in Fig. 4. As a double-edge safety razor blade of the type specified has its ends cut away adjacent to the cutting edges *e* to provide a stop shoulder *b* at each end, it will be apparent that when a half blade section such as disclosed herein is inserted between one of the clamping plates 7 and the supporting bar 2, this shoulder *b* can drop into position back of the adjacent shoulder 5. That edge of the blade section B remote from the cutting edge will engage one or more of the stop lugs 8 as shown in Fig. 4 so that with the shoulders *b* engaging shoulders 5, and portions of the blade engaging certain of the lugs 8, the blade will be held securely against displacement toward or from the opposed blade.

Blades to be used with this razor can be manufactured especially for it or, as stated, the owner of the razor can purchase suitable double-edged blades and break them into two parts so that each such blade will thus form two single-edge blades each of which has a stop shoulder *b*. The studs 10 are loosened in the razor by unscrewing or loosening the nuts 12 so that it thus becomes possible to move the clamping plates 7 limited distances away from the bars 2 without entirely withdrawing the lugs 8 from their recesses 6. The blade to be inserted is held between the thumb and finger of the user, the terminals of the blade providing the points of engagement. With the clamping plate 7 pushed upwardly relative to the bar 2, the gripped blade is inserted backwardly so that the cutting edge thereof will bridge the space between the wings 4 while the shoulders *b* will drop back of the shoulders 5. This insertion of the blade B is limited by the lugs 8 as will be obvious. When the two blades are in position and the clamping plates 7 have been tightened, said blades will be gripped firmly upon the bars 2 and will be supported with their cutting edges close together. Obviously those portions of the plates 7 adjacent to the cutting edges of the blade will be rounded to provide smooth contact surfaces 14 located outwardly from the cutting edges *e* for sliding engagement with the surface being shaved. The razor is held between the thumb and a finger of the user and is then moved back and forth over the surface being shaved. When the blade moves to the right the advancing blade merely serves as a guard for the edge of the following blade because it wipes over the surface. When the razor is moved toward the left this action is reversed, the left-hand blade having a wiping or guard action while the right-hand blade does the cutting. A blade can be quickly removed simply by loosening the stud of its clamping plate, gripping the terminals of the blade between the fingers, and pulling the blade upwardly and outwardly from under the plate 7.

In practice it is designed generally to make the ends 1 and bars 2 of a single piece of molded plastic and it is also intended to make the clamping plates 7 of plastic. It is to be understood, however, that other materials could be used if desired.

Under some conditions it might be found desirable to employ a guard bar as shown, for example, at 15 in Fig. 6. This bar can be molded as an integral part of the ends 16 of the razor and is located between but spaced equally from the supporting bars 17. The outer or exposed edge of the guard 15 can be notched or otherwise shaped and is designed to be located close to but spaced inwardly from the edges of the engaged blade. Otherwise the structure is identical with that which has already been described.

Any means can be used for connecting the studs 10 to the clamping bars 7. In the structure shown each of these studs is formed integral with a small plate 18 held within the bar 7 and forming a part thereof.

It has been found in practice that a razor such as herein described operates very efficiently. It is further advantageous because it can be compactly packed or stored and has no parts to become separated and lost. It is easily held and operated and in view of the fact that it can be quickly molded of a plastic material, it can be made and sold at low cost. As the clamp-

ing bars are extended outwardly beyond the cutting edges of the blades therebetween, these outermost portions of the bars, which are positioned in a plane located outside of the blades, serve two important functions. If the razor should be inverted and placed on the flat top of a table or the like, the portions 14 of the bars 7 will contact with the table top and thus support the cutting edges of the blades away from the supporting surface so that they will not be injured or dulled. Then, too, the rounded portions 14 when pressed against the surface being shaved, permit said surface to contact with the razor edges only when the surface is pressed back into the space between the bars and toward the edges. This is done by exerting a pressure from the razor against the surface being shaved and when this is done the skin is not only pushed back toward the cutting edges but is also drawn taut so that the shaving operation is accomplished more readily.

Obviously various changes in the design and size of the razor can be made within the scope of the invention. It is merely essential that the body portion made up of the ends 1 and the connecting or supporting bars 2 be so proportioned as to easily be held in the hand where it can be gripped by the thumb and a finger, thereby eliminating all need of a handle such as commonly employed.

What is claimed is:

1. A safety razor including a body structure having spaced oppositely disposed bearing portions positioned to support razor blades in converging planes, each blade with its cutting edge close to but spaced from the corresponding edge of the other blade, and means for fastening the blades onto the respective bearing portions, said means including plates overlying the respective blades and fastening means for the plates, said plates having rounded portions for simultaneous sliding engagement with the surface being shaved, said rounded portions extending outwardly beyond and being located at opposite sides of the area occupied by the cutting edges, said rounded surface-engaging portions being located in a plane parallel with the cutting edges but outside of the blades.
2. A safety razor, opposed razor blades each having a single cutting edge, and means for holding the blades fixed relative to each other in planes diverging from the area occupied by the cutting edges, said edges being spaced apart and parallel, the clamping means including plates converging along planes parallel with the blades and providing portions at opposite sides of said area extended outwardly beyond the cutting edges, thereby constituting means for bearing simultaneously upon a flat surface to support the blades with their cutting edges out of contact with said surface.
3. A safety razor, opposed razor blades each having a single cutting edge, and means for holding the blades fixed relative to each other in planes diverging from the area occupied by the cutting edges, said edges being spaced apart and parallel, the clamping means including plates converging along planes parallel with the blades and providing portions at opposite sides of said area extended outwardly beyond the plane occupied by the cutting edges, thereby to bear simultaneously upon the surface being shaved and hold said surface normally out of contact with the cutting edges, and means for adjust-

ing the plates into and out of blade-clamping positions.

4. A safety razor including connected members spaced apart and having bearing surfaces in planes converging toward the space between the members, blade-clamping plates on the members having rounded portions adjacent to opposite sides of said space for bearing simultaneously on a surface being shaved, and cooperating means on said plates and members for positioning single-edged blades with their cutting edges close together and parallel in said space and inwardly from the plane occupied by the outermost portions of the plates.

5. A razor blade including a structure proportioned to be gripped between the fingers of the user and including spaced fixedly connected rigid members, rigid means cooperating therewith for detachably clamping razor blades to the respective members, and cooperating elements on said members and the clamping means for holding the blades in converging planes with their cutting edges parallel and close together at the space between the members, said clamping means having portions in a plane outside

of the blades and parallel with the cutting edges for simultaneous wiping engagement with the surface to be shaved by the cutting edges therebetween.

6. A safety razor including spaced pairs of blade holding elements proportioned for holding non-alining blades with their edges close together between the elements and parallel, two of said elements being positioned at opposite sides of the blade edges for simultaneous wiping contact with a substantially flat surface being shaved by the blade edges.

7. A safety razor including a body structure proportioned to be gripped by and held between fingers of the user, said structure including opposed pairs of movably connected blade-gripping elements positioned for holding opposed non-alining blades in converging planes with their cutting edges supported between said pairs, two of said elements cooperating to provide guards at opposite sides of the edges for simultaneous wiping contact with a flat surface in a plane outside of the blades and extending across the cutting edges and parallel therewith.

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