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G. CAHILL

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RAZOR BLADE

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Fig. 1.

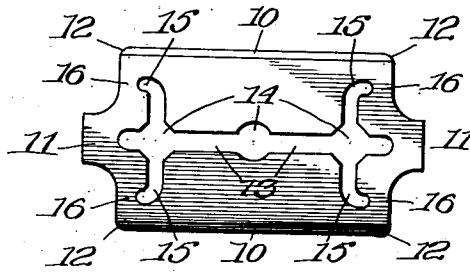


Fig. 2.

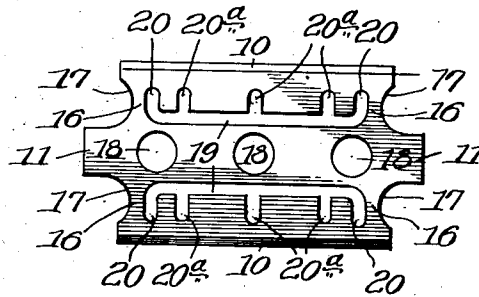
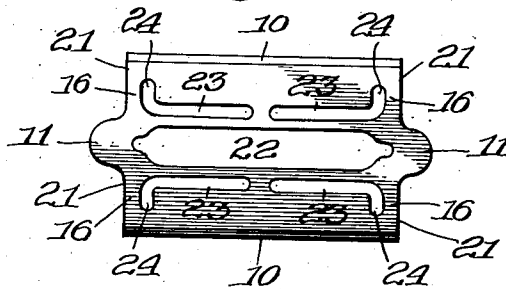


Fig. 3.



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RAZOR BLADE

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Application September 19, 1932, Serial No. 633,892

8 Claims. (Cl. 30—351)

This invention relates to razor blades and more particularly to blades of the thin flexible type adapted to be clamped within a guard-equipped holder.

5 In clamping blades of this type between the curved clamping surfaces of the holder, the blade itself is forced into a position of appreciable transverse curvature and, even though the blade be bent about a central axis or hinge, the strain causes the cutting edges of the blade to become slightly waved, warped or otherwise distorted. A primary object of the present invention is to provide a blade adapted to be clamped about the fulcrum of the holder without imposing undue stress upon the cutting edges and to relieve to a large extent the stress upon the entire blade by providing hinge areas between the longitudinal center of the blade and the cutting edges. Other specific objects and advantages will appear as the specification proceeds.

The invention is fully described in the following specification and shown in the accompanying drawing, in which—

Fig. 1 is a plan view of the blade embodying my invention; Fig. 2, a plan view of a modified form of blade embodying my invention; and Fig. 3, a plan view of another form of blade embodying my invention.

In the illustration given in Fig. 1, the blade is of general rectangular shape having oppositely disposed cutting edges 10 and having reduced end extensions 11. The blade is shown with slightly rounded corners 12. A slot 13 extends through the longitudinal center of the blade and is provided with enlarged central and end openings 14 adapted to receive projections on the holder by which the blade may be centered and accurately locked upon the holder. Communicating with the end openings 14 are laterally extending slots 15 which are curved outwardly toward the ends of the blade. The hinge areas 16 between the ends of slots 15 and the blade ends, being of less extent than the metal between the ends of slot 13 and the extensions 11, permit the blade, during the clamping operation, to bend about hinge areas 16 rather than along the longitudinal center of the blade. The easy yielding of the edge portions of the blade along the dual hinges 16 results in placing very little strain upon the cutting edges and leaves them unaffected by any stress which may be placed upon the central and more rigid portion of the blade.

In the illustration given in Fig. 2, the blade is provided with cutting edges 10, end extensions 11 and recesses 17 adjacent the extensions 11. In

this form of blade, circular attachment openings 18 are employed, although it will be understood that any suitable form of attachment opening may be used. Laterally disposed with respect to the openings 18 are longitudinal slots 19 which are provided near their ends with outwardly curved portions 20. The outwardly curved portions 20 lie adjacent the recesses 17 so as to provide therebetween thin flexible hinges 16. Additional flexibility may be obtained by employing supplemental slots 20^a which may be of any desired number or shape. The slots 20^a make it practical to use heavier metal in the blade with resulting better cutting edges. The operation of this form of blade is substantially the same as that of the blade shown in Fig. 1, the edge portions of the blade turning easily upon the hinges 16 so as to provide straight and true edges which are not distorted by the resistance exerted upon the central portion of the blade when it is flexed.

The blade shown in Fig. 3 illustrates another form of the invention. The blade is rectangular in shape having cutting edges 10 and straight end walls 21 equipped with extensions 11. A longitudinal slot 22 extends through the central portion of the blade. Laterally disposed with respect to the slot 22 are interrupted slots 23 which are outwardly turned near their ends as indicated by the numeral 24. Between the end portions 24 of the slots 23 and the ends 21 of the blade are provided hinge areas 16 about which the edge portions of the blade may readily swing. The areas 16 being less than the areas between the ends of slots 22 and the ends of extensions 11 will cause the blade to turn upon the hinge areas 16 during the clamping operation.

While in the illustrations given, I have shown certain forms of blades equipped laterally with slots or openings, it will be understood that my invention is applicable to other forms of blades and that the laterally extending hinge areas may be provided by other forms of slots or openings, continuous, interrupted or spaced apart, without departing from the principle of my invention. If a blade having a single cutting edge is employed, the lateral or intermediate hinge produces a true cutting edge substantially relieved from the stress of the clamping operation. If a two-edged blade is used, the dual hinges intermediate the longitudinal center of the blade and the cutting edges bring about the same beneficial result.

The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitations should be understood

therefrom, but the appended claims should be construed as broadly as permissible, in view of the prior art.

I claim:

5 1. A double-edged razor blade of thin metal having reduced ends extended in line with the longitudinal center, a positioning opening on its longitudinal center, openings adjacent the ends of the blade and about midway between the longitudinal center and each cutting edge, said openings extending laterally beyond said reduced ends and to provide between them and the ends of the blade hinge areas parallel with the longitudinal center of the blade, the distance between said openings and the adjacent ends of the blade being less than the distance between said positioning opening and the outer ends of said reduced blade ends.

2. A double-edged razor blade of thin metal having reduced ends extended in line with the longitudinal center, a central attachment opening, longitudinal auxiliary slots between the center of said blade and its cutting edges, said slots having their ends turned at right angles so as to extend laterally with respect to said central opening and beyond said reduced ends, said slot portions beyond said reduced ends providing between them and the ends of the blade hinge areas parallel with the longitudinal center of the blade, the distance between said slot portions and the ends of the blade being less than the distance between said central opening and the outer ends of said reduced blade ends.

3. A safety razor blade adapted to be clamped in a holder therefor and consisting of a main body portion and end portions defined by recesses in said blade, said main body portion comprising two parallel cutting edge portions and each one of said end portions being flexibly connected to the two cutting edge portions, the flexible connection between said blade portions forming narrow bands directed at right angles to said cutting edges within the limits defined by the cutting edges of the blade.

4. A safety razor blade subject to flexing stresses when clamped in a holder therefor and consisting of a main body portion and end portions defined by recesses in said blade, said main body portion comprising two parallel cutting edge

portions in spaced relation to one another, and said end portions being of a width less than that of said main body portion, and flexible portions in the path of said stresses forming narrow bands directed at right angles to said cutting edges and connecting said end portions and said spaced blade portions within the limits defined by the length of the cutting edges of the blade.

5. A safety razor blade having a central longitudinal slot and recesses between the blade end portions and the portions spaced by said slot, cutting edges on said spaced portions, said recesses and the ends of said slot cooperating to define narrow bands directed at right angles to said cutting edges within the longitudinal limits of said cutting edges and flexibly connecting said end portions and said spaced blade portions.

6. A safety razor blade having a central longitudinal slot laterally extending at its ends and recesses between the blade end portions and the portions spaced by said slot, and cutting edges on said spaced blade portions, the blade portions between said recesses and the lateral extension of said slot forming necks extending at right angles to the longitudinal axis of the blade within the longitudinal limits of said cutting edges.

7. A safety razor blade having a central longitudinal slot, parallel cutting edges on the blade portions spaced by said slot, end portions of a width less than that of the main body of the blade, and flexible portions forming narrow bands directed at right angles to said cutting edges and connecting said end portions and said spaced blade portions, the pliability of said flexible portions exceeding that of said end portions.

8. A safety razor blade adapted to be clamped in a holder therefor, and consisting of a main body portion and end portions defined by recesses in said blade, said main body portion comprising two parallel edges, a longitudinal slot for positioning the blade in the said holder, lateral slots at each end of the body portion bisected by said longitudinal slot, said lateral slots extending beyond said end portions and forming flexing necks between them and the ends of the blade, the flexibility of said flexing necks exceeding that of the said end portions.

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