

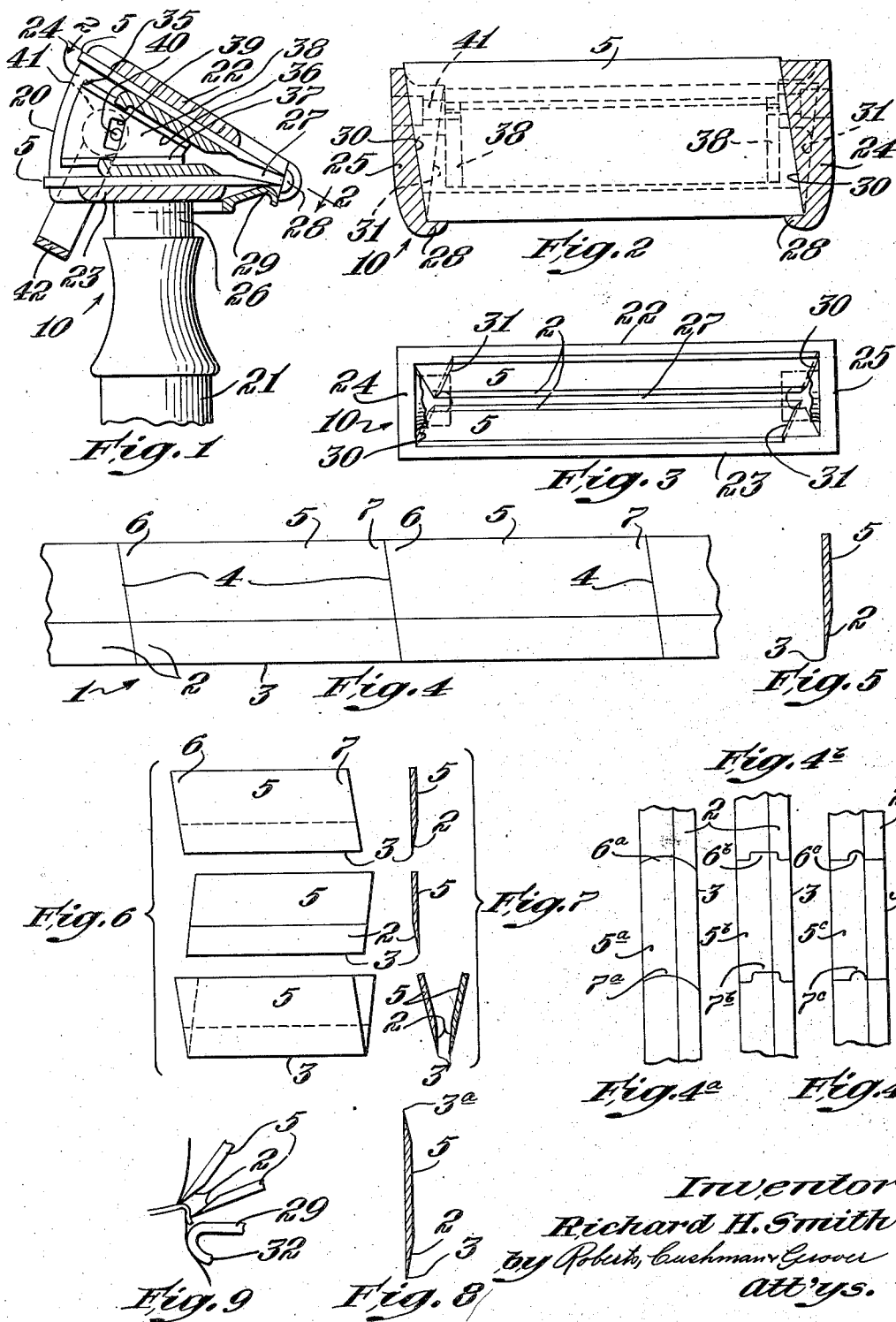
May 3, 1949.

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2,469,010

RAZOR

Filed April 7, 1944



UNITED STATES PATENT OFFICE

2,469,010

RAZOR

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Application April 7, 1944, Serial No. 529,906

3 Claims. (Cl. 30—50)

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This invention relates to double-bladed razors of the type shown in Patent No. 2,335,547, granted to me November 30, 1943.

In the manufacture of conventional razor blades, one or both longitudinal edges of a strip or ribbon of suitable steel are ground to provide a double-beveled edge or edges. Theoretically the grinding instrumentalities are set so as to provide symmetrically beveled surfaces, but as a practical matter, due to the slight inaccuracies involved in grinding and sharpening, the beveling is more or less unsymmetrical. For use in a single blade razor the unsymmetrical bevel is of little or not importance so long as the cutting edge is reasonably true, but with a double-bladed razor the unsymmetrical bevel results in an appreciable variation in the gap between the cutting edges of the blade, and since the width and uniformity ($\pm 0.0005''$) of the gap are critical and hence of primary importance, it follows that blades having the conventional double-beveled edges are not sufficiently reliable for satisfactory use in double-bladed razors.

Although the use of blades having a single bevel edge would to some extent avoid the troublesome features of the double-beveled blades, in either case the width of the gap between the cutting edges in a double-bladed razor would nevertheless vary, depending upon which one of the three relative positions the companion blades were held in the razor, that is, whether the obverse faces of the blades were adjacent, whether the reverse faces were adjacent, or whether the obverse face of one blade was adjacent to the reverse face of the companion blade. Hence, securing the correct gap between the cutting edges of the blades would ordinarily be more a matter of chance than of design.

The principal objects of the present invention are to provide a double-bladed razor and blades for use therewith, which overcomes the aforementioned difficulties, and to provide an inexpensive razor blade of the above type which is of simple design and which lends itself to mass production manufacture.

Further objects will be apparent from a consideration of the following description and the accompanying drawings wherein

Fig. 1 is a side elevation of an assembled

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razor blade holder and blades constructed in accordance with the present invention;

Fig. 2 is a section, on a reduced scale, taken on the line 2—2 of Fig. 1;

Fig. 3 is a top plan view, on a reduced scale, of the assemblage shown in Fig. 1 with certain parts omitted;

Fig. 4 is a plan view illustrating the manner in which the blades may be made from a single ribbon or strip of steel;

Figs. 4^a, 4^b and 4^c are views similar to Fig. 4 but showing modified forms of blades;

Fig. 5 is a transverse section through any of the strips shown in Figs. 4 to 4^c;

Fig. 6 is a composite view of the companion blades, individually and in assembled relation;

Fig. 7 is a composite view of transverse sections through the blades shown in Fig. 6;

Fig. 8 is a transverse section through a double edge blade constructed in accordance with the present invention; and

Fig. 9 is a diagrammatic view illustrating the manner of using a razor constructed in accordance with the present invention.

In accordance with the present invention each of the razor blades is provided with a single-beveled cutting edge, and one of the edges is formed with a contour dissimilar to the opposite edge of the blade, the dissimilar portions being so arranged as to insure absolute end-wise selectivity. The term "dissimilar" is herein used as meaning either simply different, or specifically lacking symmetry about a transverse axis of the blade. Although various shapes may be provided to obtain non-symmetrical or dissimilar portions at opposite ends, practical considerations indicate the use of simple shapes permitting economy in mass production manufacture. To this end each blade is preferably shaped as a parallelogram, more particularly a rhomboid wherein one or both of the elongate edges are single-bevel ground to provide a cutting edge and the shorter edges provide the non-symmetrical end portions. The holder for the blades may be constructed substantially as shown in my prior Patents Nos. 1,579,844 and 2,335,547, except for the blade-receiving pockets which must be shaped to receive the rhomboidal blades or otherwise accommodate the dissimilar end portions.

Referring to Figs. 4 to 9 of the drawings, the numeral 1 designates an elongate strip of suitable blade steel prepared in accordance with any of the well-known procedures. As here shown, the marginal portion of one face extending along one of the longitudinal edges is ground so as to provide a single-beveled cutting edge 3. The individual blades are formed by spaced transverse cuts 4 each of which extends at an angle greater or less than 90° relative to the cutting edge 3, thereby providing rhomboidal shaped blades 5 each having non-symmetrical end portions 6 and 7 as shown in Fig. 6.

If desired individual blades such as 5^a, 5^b and 5^c may be formed by curvilinear and irregular cuts, illustrated in Figs. 4^a to 4^c, so long as the opposite ends provide dissimilar portions insuring absolute endwise selectivity. Although each of the embodiments of Figs. 4 to 7 have but a single cutting edge 3, the other longitudinal edge may likewise be single-bevel ground to provide another cutting edge 3^a, as indicated in Fig. 8.

The specific construction of the holder for the blades will depend upon the particular type of blade which it is to receive. The holder 10 shown in Figs. 1 to 3 is designed to receive the rhomboidal shaped blades illustrated in Figs. 4 and 5 so as to maintain the blades in the relationship illustrated in Figs. 6 and 7. The holder 10 comprises a head 20 and a handle 21, the head 20 comprising outer and inner walls 22 and 23 integral with or joined to end walls 24 and 25, which walls define a frame-like head.

The inner wall 23 is provided with a stud 26 having a threaded engagement with the end of the handle 21 so that these parts may be readily detached. The outer and inner walls 22 and 23 converge towards each other with their convergent ends spaced so as to provide a mouth or opening 27. The end walls 24 and 25 extend beyond the walls 22 and 23 and carry inwardly extending fingers 28 which constitute stops or abutments for positioning the corner portions of the blades 5. The walls 22, 23, 24 and 25 are grooved, recessed or otherwise shaped, as indicated at 30 and 31, to receive the ends 6 and 7 of the rhomboidal shaped blades 5, as illustrated in Figs. 2 and 3, and it will be observed that the grooved or recessed portions 30, 31 cooperate with the inwardly extending fingers 28 to maintain the blades in the proper relationship shown in Figs. 6 and 7. A guard 29 is fixed to the outer face of wall 23 so as to extend into the space between the fingers 28, as shown in Fig. 1. The free side of the guard 29 terminates in a curved flange 32 which extends beyond the plane defined by the cutting edges of the blades.

The blades 5 are clamped against the inner faces of the walls 22 and 23 with their cutting edges in contact with fingers 28 by a wedge-shaped element 35 comprising outer and inner plates 36 and 37 connected to the end plates 38, as shown in Figs. 1 and 2. The wedge-shaped element is reciprocally mounted within the head so as to define with walls 22 and 23 the blade-receiving pockets. Each end plate 38 is formed with a transverse slot 39 which receives a pin 40 eccentrically mounted upon a stud 41 (Fig. 1) which is rotatably mounted in a boss formed integral with the adjacent end wall of the head. The studs 41 are connected by a U-shaped strap 42 secured at its ends to the studs and by means of which the studs may be rotated so as to reciprocate the wedge-shaped element 35, thereby either to clamp the blades 5 in the pockets against the inner faces

of the walls 22 and 23, or release them to permit removal. For further details of the construction of this type of holder, reference may be had to my prior Patent No. 2,335,547.

Due to the arrangement of the recessed portions 30 and 31 of the head, the blades 5 can only be inserted so that their beveled faces 2 are juxtaposed to each other, as illustrated in Figs. 3, 6 and 7, thus providing for absolute endwise selectivity which prevents the blades from being inserted in the holder in the wrong way.

In using a razor constructed in accordance with the present invention, the guard 29 and the forward edge of the inner blade 5 are in contact with the skin, while the edge of the outer blade 5 is either out of contact or only slightly in contact with the skin, as illustrated in Fig. 9. Hence, when shaving the guard 29 depresses the skin while the forward edge of the inner blade 5 catches and lays over the hair or stubble, holding it in such position until it has been severed by the cutting edge of the outer blade 5 along a line nearly normal to the hair length and slightly below the surface of the skin due to the tilting of the hair or stubble by the inner blade 5. It thus appears that the proper use of a razor of this type depends upon maintaining the critical spaced relationship between the cutting edges of the blades 5 and that in a razor constructed in accordance with the present invention, this critical relationship is always maintained since the blades can only be inserted in the holder so that the single-beveled surfaces defining the cutting edges are held in the same relationship to each other.

While I have shown and described different desirable embodiments of the invention, it is to be understood that this disclosure is for the purpose of illustration, and that various changes in shape, proportion and arrangement of parts, as well as the substitution of equivalent elements for those herein shown and described, may be made without departing from the spirit and scope of the present invention as set forth in the appended claims.

I claim:

1. A razor comprising a pair of blades each of generally parallelogrammic shape and having a single-beveled cutting edge, and a holder for supporting said blades at an acute angle to each other with their cutting edges maintained in predetermined spaced parallel relationship, one edge of each blade having a contour dissimilar to the opposite edge of said blade and said holder having parts shaped to receive the dissimilar portions of each blade so that said blades can be fitted into said holder only in such a way as always to maintain the same relationship between their single-beveled cutting edges.

2. A razor comprising a pair of blades each of substantially elongate parallelogrammic shape and having a single-beveled cutting edge, and a holder for supporting said blades at an acute angle to each other with their cutting edges maintained in predetermined spaced parallel relationship, one of the shorter edges of each blade having a contour dissimilar to the opposite edge of said blade and said holder having parts shaped to receive the dissimilar portions of each blade so that said blades can be fitted into said holder only in such a way as always to maintain the same relationship between their single-beveled cutting edges.

3. A razor comprising a pair of blades each of rhomboidal shape and having a single-beveled cutting edge, and a holder for supporting said

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blades at an acute angle to each other with their cutting edges maintained in predetermined spaced parallel relationship, said holder having parts shaped to receive the end portions of each blade so that said blades can be fitted into said holder only in such a way as always to maintain the same relationship between the single-beveled cutting edges.

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REFERENCES CITED

The following references are of record in the file of this patent:

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UNITED STATES PATENTS

Number	Name	Date
941,231	Cupelli	Nov. 23, 1909
999,398	Phillips	Aug. 1, 1911
1,008,648	Kiefer	Nov. 14, 1911
1,581,694	I. Smith	Apr. 20, 1926
1,598,130	Greef	Aug. 31, 1926
1,617,238	Earley	Feb. 8, 1927
1,859,083	Gaisman	May 17, 1932
2,004,008	Minnelli	June 4, 1935
2,335,547	R. H. Smith	Nov. 30, 1943