Sept. 8, 1959 H. I. PRESSMAN ET AL 2,902,758

FOUR EDGE SAFETY RAZOR

Filed Oct. 4, 1957 2 Sheets-Sheet 1

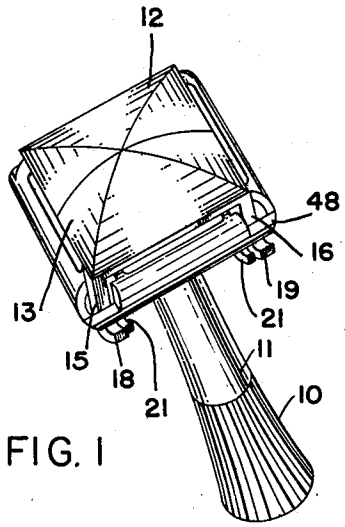


FIG. 1

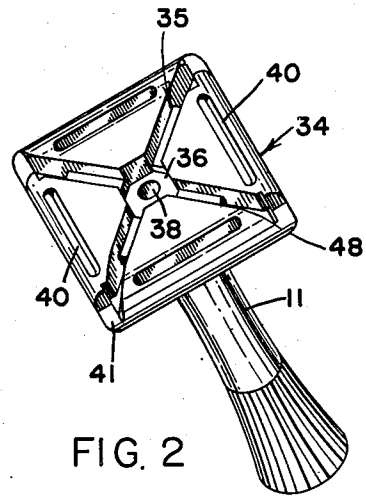


FIG. 2

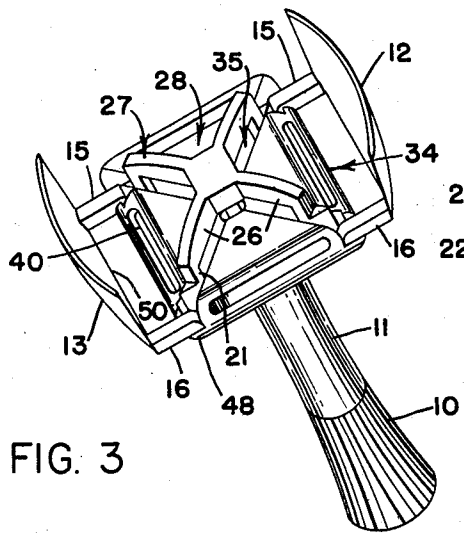


FIG. 3

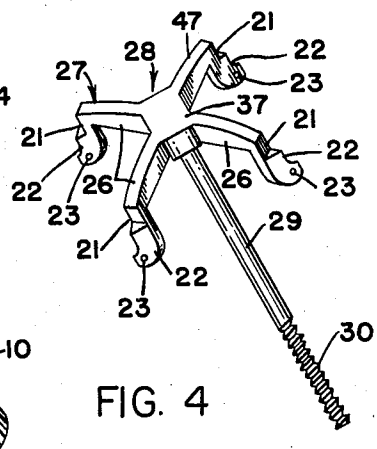


FIG. 4

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FOUR EDGE SAFETY RAZOR

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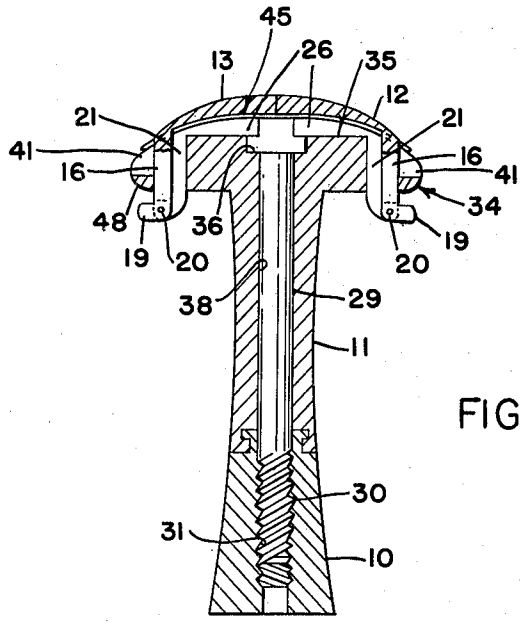


FIG. 5

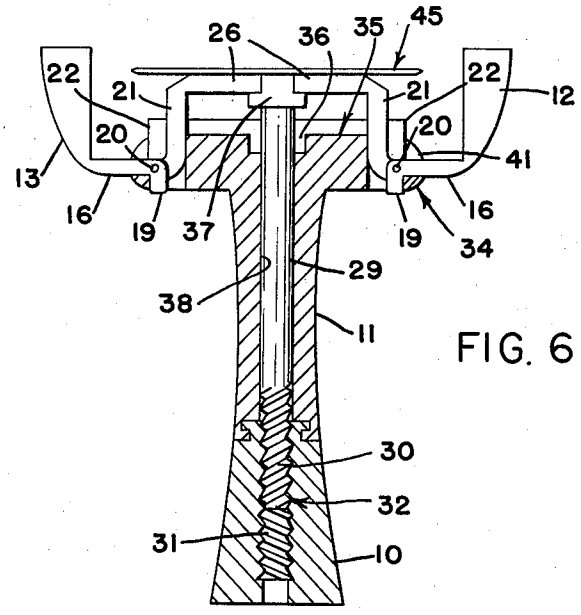


FIG. 6

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FOUR EDGE SAFETY RAZOR

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4 Claims. (Cl. 30—60.5)

This application relates as indicated to a quick opening, four edge razor of a novel construction that is adapted to use a four-sided blade and to hold the same securely so that it may be employed as a safety razor between a pivotally mounted head member and a guard member.

This invention further relates to a quick opening, four edge razor having a screw opening device and a spider construction with four arms extending outwardly and downwardly with a set of pins to the arms on one side of the razor secured through an extension of the cover member. The spider structure is adapted to move longitudinally along the handle and upwardly from the head of the razor to move the cover member upwardly and outwardly around an enlargement on the cover member so that a pivotal action occurs, pivoting the head with the cover member outwardly therefrom.

In general in connection with four edge razors, there are a number of blades and four edge razor constructions as taught in the following U.S. patents:

1,872,721	1,981,773
D. 174,251	868,697
1,875,480	855,252
888,019	918,126
951,036	1,875,538
1,221,065	

In addition to the above patents, there are also various types of quick opening, safety razors, such as taught in the following U.S. patents:

Reissue 18,955
Reissue 22,708
2,729,888

In general in connection with four edge razors, there has been some difficulty in the past in trying to get an acceptable construction which uses an easily duplicated blade and lends itself to mass production. Earlier efforts were made to produce a four edge razor, but all of these early efforts had certain weaknesses, and problems were experienced in putting the razors together and in cleaning them. None of them developed into any wide-scale commercial success.

This invention is directed towards a new approach to a safety razor using a four edge blade which has the obvious advantage of much greater economy in the use of steel for the blades because almost the same amount of steel is being used in a square blade as in a rectangular blade, and two more surfaces may be used. Of course, it is to be appreciated that modern production techniques provide extreme accuracy in manufacture and this facilitates the manufacture of blades for the razors of this application that are identical with one another without substantial variance.

An object of this invention is to provide a new and improved quick opening, safety razor of four edge construction in which all four surfaces may be used without resetting the blade.

A further object of this invention is to provide a new and improved simplified, quick opening, safety razor structure for four edge blades.

A further object of this invention is to provide a new and improved quick opening means involving a spider structure and a plurality of hinges on either side of the blade which will not interfere with the usable edge surfaces of the blade.

A further object of this invention is to provide a new and improved four edge, quick opening safety razor having pivotal opening structures at the corners of the blades and with cut-out sections for a blade so that there is ease of operation while at the same time there is reduced danger of cutting by a sharp corner on the blade.

To the accomplishment of the foregoing and related ends, said invention then consists of the means hereinafter fully described and particularly pointed out in the claims; the following description setting forth in detail one approved means of carrying out the invention, such disclosed means, however, constituting but one of the various ways in which the principles of the invention may be used.

In the drawings:

Fig. 1 is a perspective view of the razor;

Fig. 2 is a disassembled view of the head and handle member;

Fig. 3 is a view rotated 90 degrees of the razor opened;

Fig. 4 is a view of the spider structure for holding the blade and lifting the pivotal head member;

Fig. 5 is a cross-sectional view in closed position of the razor; and

Fig. 6 is a further view, partly in cross-section, showing the spider structure raised and the cover members pivoted open.

In connection with the drawings, 10 shows a flared handle portion adapted for pivotal rotation, and 11 shows the handle extension. One cover member is shown at 12 on the far side of the razor, and 13 shows a cover member on the near side, having a plurality of downwardly extending arms 15 and 16, each of which has a boss or extension 18 and 19. These are connected by means of a pivot pin 20 to a depending arm 21 having an enlarged portion 22 with an opening 23 for pivot pin 20 to extend through the cover member and through the arm. There are four such arms, each of which is connected to an intermediate extension arm 26. The opposite arm on one side is shown generally at 27 and it is identical in all respects except that the pivot pins are in axial alignment so that the openings 23 are in axial alignment, and the cover will thereby lift upwardly and pivot outwardly from the head. The arms and downward extensions on the opposite side are identical in all respects.

The spider structure shown generally at 28 has an operating strut or member 29 having a high-pitched, threaded section 30 adapted for quick opening of the razor.

In Fig. 5 the razor is shown closed, and the threaded section 30 is deep in the threaded section of the handle 10, as, for example, at 31. However, in the open position as in connection with Fig. 6, the threads have moved upwardly to a point indicated at 32.

In general in connection with this invention, a head member seen generally at 34, particularly in connection with Fig. 2, has a cruciform groove indicated at 35 which is adapted to mate with the spider arm structure as seen in connection with Fig. 4. A depressed portion indicated at 36 is for the square center section 37, and an opening 38 is for the strut member 29. Grooves shown at 40 are in each face, and a vertical opening 41 is shown at each of the corners for the arms 15 and 16. In the

operation of the razor, rotation of the handle **10** will separate the threads **30** from the handle causing the strut member **29** to rise out of the hollow handle member **11** putting pressure on the square shank or head **37** and through this to the arm members, such as at **27**, and to the vertically depending arms **21**. Each of these is pivoted as by means of an aperture **23** and by means of a pin **20** to arm **16** of the cover member **13** and as the spider and its arms rise, they lift each of the cover members. At the same time the razor blade shown at **45** in Fig. 6 lifts up on the upper surface shown at **47** of the spider structure and after a limited amount of engagement, the boss member **19** contacts the underside of the head member **34** particularly the guard as shown at **48**, and causes a limited amount of rotation of the cover member so that it pivots outwardly around the pin **20**. In this way after several turns or fractions of a turn, the cover members are shown as in Fig. 6, and the razor blade may be removed.

The cover members **12** and **13** are curved on the outer sides so that they will bend each of the outer surfaces of the blade to provide a suitable angle for shaving, and the angle between the arms **15** and **16** along surface **50** will similarly cause the blades to depress and form the blade into a proper angle for cutting between the cutting member and the safety guard.

In connection with these views, it will be seen that by this structure there is no danger that the corners of the blade will cut or nick the person and, in fact, these corners are being used for the extensions to the spider and to the cover members. The operation of the spider lifts the cover members and leaves the blade in a position to be easily picked up, possibly at one of the corners of the blade, which has a cutout section and thereby provides easy gripping. There possibly may be rounded corners to reduce the chances of cutting.

By this combination all four surfaces of the blade can be used, and the cover members pivotally hinged together and still held down securely when in a closed position, and there is a positive, quick opening feature to readily remove the blade.

The operating mechanism does not prevent or cover any of the four edges of the blade and so there is more cutting surface on the blade.

Although the present invention has been described in connection with a few preferred embodiments thereof, variations and modifications may be resorted to by those skilled in the art without departing from the principles of the invention. All of these variations and modifications are considered to be within the true spirit and scope of the present invention as disclosed in the foregoing description and defined by the appended claims.

We claim:

1. In a quick opening safety razor, a square head section fixedly attached to a handle member, a central opening through said head section and handle member, a spider structure having four arms projecting therefrom across said head section and operating means through the hollow handle, means for extending and retracting said spider structure, dependent arms from the ends of said spider structure, openings at each of the corners of said head section, a pair of cover members pivotally secured in said openings and pivoted to the ends of the dependent arms of said spider, and a boss on said cover members projecting in the opposite direction, each of said cover members covering a half of the head of the razor and curved in both directions, said cover members further having a pair of arm extensions extending downwardly therefrom to the pivot points, whereby the spider is adapted to lift the spider arms and the dependent arms through the pivot points to the cover members and whereby the boss contacts the underside of the openings in the head body to rotate the cover members outwardly so that a blade may be inserted and removed therefrom.

2. In the quick opening safety razor of claim 1 in which the spider has a plurality of arms, one extending to each of the corners of the head, and in which the head section has mating grooves for the arms.

3. In the quick opening safety razor of claim 2 in which the spider and the arms extending to the corners of the head are formed with an upper surface in the shape of an umbrella and are adapted to mate with the underside of the closed cover members of the quick opening safety razor.

4. In the quick opening safety razor of claim 3 in which the spider section and the umbrella section are curved with the arms extending outwardly with substantially parallel sides adapted to mate with the slots to each of the corners of the blade in order to hold the square razor blade in substantial alignment.

References Cited in the file of this patent

UNITED STATES PATENTS

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2,048,560	Muros	July 21, 1936