Sept. 6, 1932. R. G. WINKLER 1,875,538

RAZOR

Original Filed April 6, 1931

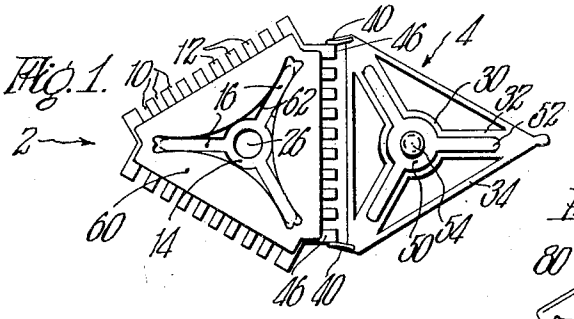


Fig. 1.

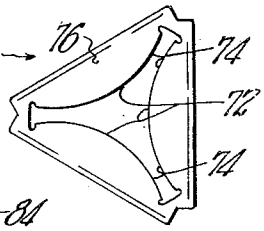


Fig. 4.

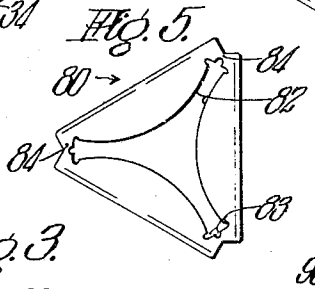


Fig. 5.

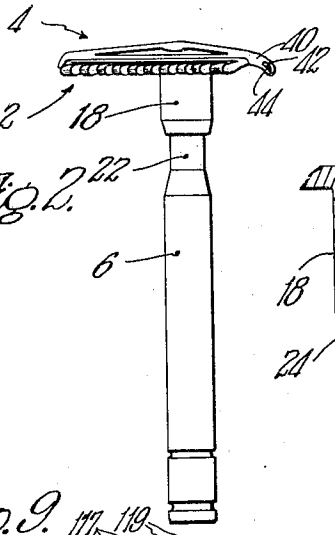


Fig. 2.

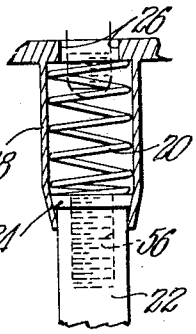


Fig. 3.

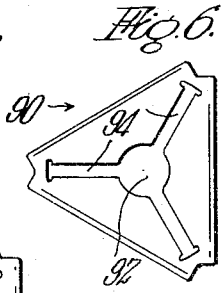


Fig. 6.

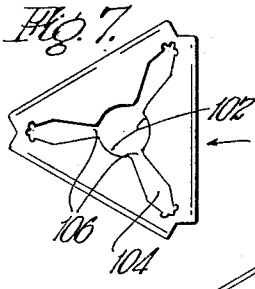


Fig. 7.

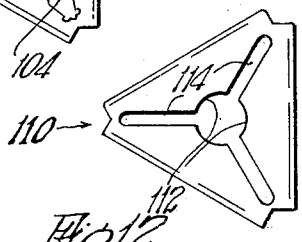


Fig. 8.

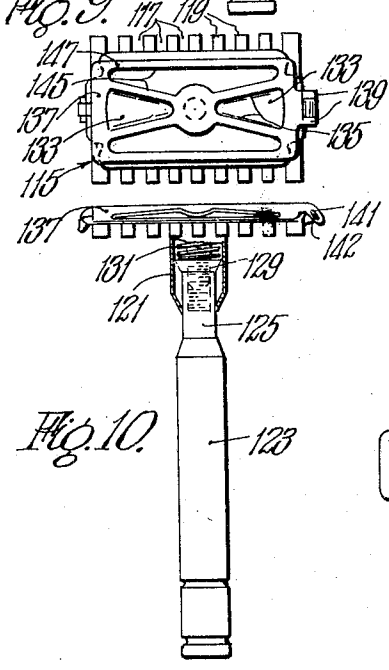


Fig. 9.

Fig. 10.

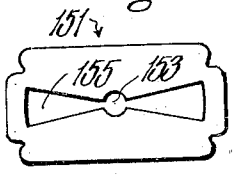


Fig. 11.

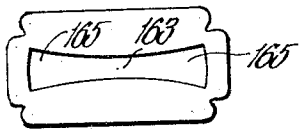


Fig. 12.

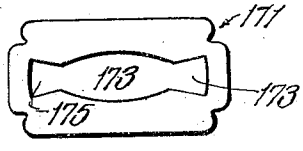


Fig. 13.

INVENTOR.
Richard G. Winkler
BY
Carter C. Ross
his ATTORNEY.

Patented Sept. 6, 1932

1,875,538

UNITED STATES PATENT OFFICE

RICHARD G. WINKLER, OF SPRINGFIELD, MASSACHUSETTS

RAZOR

Application filed April 6, 1931, Serial No. 528,002. Renewed September 30, 1931.

This invention relates to improvements in safety razors and blades therefor.

The principal objects of the invention are directed to the provision of a safety razor which includes a plate and a cap hinged thereto for clamping a blade therebetween and means associated with the plate and cap for securing them together.

Various novel features and advantages of the invention will be more fully hereinafter referred to in connection with the accompanying drawing which shows the form of the invention at present preferred.

In the drawing:

Fig. 1 is a plan view of a razor embodying the novel features of the invention, with the cap swung to an open or non-clamping position.

Fig. 2 is a side elevational view of the razor shown in Fig. 1, with the cap shown in a blade-clamping position.

Fig. 3 is an enlarged fragmentary sectional view showing how the handle is associated with the plate.

Figs. 4 to 8 inclusive are plan views of various forms of blades for use with the razor.

Fig. 9 is a plan view of a modified form of the invention.

Fig. 10 is a side elevational view of the same, and

Figs. 11 to 13 inclusive are plan views of various forms of blades for use with the razor shown in Figs. 9 to 10.

Referring now to the figures in detail the invention will be more fully described.

The razor of the invention consists in a general way of a plate 2, a cap 4 mounted thereon for swinging movements so as to be movable from a blade-clamping position to a non-clamping position at a side of the plate and a movable handle 6 associated with the plate which is arranged for movements to engage and disengage a part carried by the cap as will be explained.

The plate 2 is preferably triangular in shape and has a plurality of grooves 10 and ridges 12 are in adjacent side edges thereof. A central socket 14 in the upper side of the plate 2 is associated with slots or grooves 16 radiating therefrom.

A sleeve 18 is fixed to the under side of the plate 2 and encloses a spring 20 as shown in Fig. 3. A shank part 22 of the handle 6 has a flange 24 on the upper end thereof which is larger than the lower opening into the end of the sleeve. The handle is free to rotate or move up and down in the sleeve and relative to the plate while the spring 20 bears on the flange 24 and tends to urge the handle downwardly. An opening 26 in the plate is to permit a part of the cap to be inserted in the sleeve for engagement by the shank of the handle.

The cap 4 has a central hub 30 and arms 32 extending radially therefrom which arms are connected at their outer ends by a peripheral rim or rims 34.

Hinge ears 40 mounted at certain corners of the cap 4 are slotted at 42, as shown in Fig. 2, and receive pivots 44 carried in the outer ridges 46 at opposite sides of the plate whereby the cap may swing from a position to overlie a blade on the plate and the position at a side of the plate as is shown in Fig. 1.

A central boss 50 of the cap and radially extending bars 52 are receivable in the socket 14 and grooves 16 on the upper side of the plate 2. A stud 54 extends from the boss 50 and is adapted when the cap overlies the plate to extend into and through the opening thereof. This stud is screw-threaded for engagement with a screw-threaded socket 56 in the upper end of the shank 22 of the handle.

A blade 60 is provided which is of triangular shape and has a plurality of angularly disposed cutting edges. This blade is provided with a central cut-out so that when it overlies the plate, the boss and arms of the cap may pass therethrough into the socket and grooves of the plate. When the cap is swung to overlie the blade the stud 54 of the cap will extend through the opening 26, the boss will be received in the socket 14, and the bars 52 will be received in the grooves of the plate. The sides of the opening in the blade are arranged to abut the sides of the boss and the bars whereby the blade will be held against shifting movements.

As cap 4 overlies the blade 60 as shown in Fig. 2, the handle is moved upwardly against the action of the spring and is then rotated so that the upper end of the handle is screwed onto the stud of the cap. In this way the cap is brought to bear on the blade and clamp the blade between the cap and plate.

As the blade is clamped, the rim 54 of the cap bears thereon adjacent the cutting edges of the blade and in fact quite closely to the said edges and in that way holds the cutting edges firmly on to the ridges at the marginal edges of the plate.

The modification of the blade shown in Figs. 4, 5, 6 and 7 will now be explained.

A blade 70 as in Fig. 4 has a cut-out which is centrally disposed similar to the blade shown in Fig. 1, so as to provide a central opening 72 and radial slots 74 for receiving the boss and bars of the cap. The ends of the slot are extended to a point quite close to the corners of the blade so that the sides of the blade indicated at 76 may move relative to one another and be pressed onto the plate by the cap in the desired manner.

The blade 80 in Fig. 5 is similar to the blade shown in Fig. 4. In this case the ends 83 of slots 82 therein are formed to give the utmost flexibility of the blade at the corners marked 84.

The blade shown in Fig. 6, indicated as 90, has a central opening 92 and slots 94 radiating therefrom towards the corners of the blade. As in the other cases the slots terminate closely adjacent the corners to provide the utmost flexibility of the blade.

The blade 100 shown in Fig. 7 has a central opening 102 and slots 104 which are formed with restricted openings 106 adjacent the central opening. This is so the bars of the cap may be embraced closely adjacent the hub portion thereof.

The blade 110 shown in Fig. 8 has a central opening 112 with slots 114 radiating therefrom, as shown. This opening and the slots are to receive the parts 50 and 52 of the cap and by the means thereof is held between the cap and plate against relative movements.

In this form of the invention a plate 115 is provided with alternate grooves and ridges 117 and 119 on opposite sides thereof. A sleeve 121 is carried by the lower end of the plate and slidably receives an upper shank portion 125 of a handle 123. As in the former case this handle 123 is provided with a threaded socket 127 in its upper end for receiving a stud 129 of a cap 137. A spring 131 is interposed between the upper end of the handle and the under side of the plate 115 as in the former case.

Bar members 133 are provided on the upper side of the plate and are receivable in slots 135 of the cap 137. The cap is provided with ears 139 which are slotted at 141 for receiving pivots 142 of the plate whereby the cap is hinged for swinging movements relative to the plate.

In this form of the invention the handle 123 is rotated relative to the plate to release the stud 129 whereby the cap 137 is free to swing from its closed position shown in Figs. 9 and 10 to an open position and to thereby release the blade. By turning the handle 123 to engage the stud the cap may be caused to firmly clamp the blade to the plate.

The cap 137 is cut out at 145 to expose portions of the upper side of the blade and provide bars 147 at opposite sides thereof for bearing on the blade. In this way the cutting edges of the blade are held firmly against the serrated edges of the plate.

In Figs. 11, 12 and 13 there is shown three forms of blades which will fit the plate and cap described.

The blade 151 shown in Fig. 11 has a central opening 153 for receiving the stud 129 of the cap and diverging openings 155 at opposite sides thereof for receiving the parts 133 of the plate.

The blade 161 in Fig. 12 has an opening which diverges from a narrow central portion 163 to relatively wider outer portions 165. This opening is arranged to receive the parts 133 of the plate and the stud 129 and in co-operation with the parts 133 the blade is held against relative shifting movements when clamped between the cap and plate.

The blade 171 in Fig. 13 has an enlarged central opening 173 and tapering openings 175 at opposite ends thereof for receiving the part 133 of the blade, so that it will be held against relative movements when clamped between the plate and cap.

Any of these forms of blades are adapted for clamping between the plate and clamp and are so shaped as to co-operate with the parts of the blade and cap whereby they are held against shifting movements while so clamped.

This invention may take various forms without departing from the spirit and scope thereof and it is desired to be limited, if at all, by the appended claims rather than by the foregoing description.

What is claimed is:

1. A razor of the class described comprising in combination, a blade supporting plate provided with an opening a tubular member depending from said plate around the opening, a handle having its upper part reciprocable and rotatable in said tubular member, the lower end of the tubular member having a restricted opening, the upper end of the handle being enlarged to prevent separation of the plate from the handle, a cap hinged to said plate for clamping a blade thereon, a threaded stud carried by the cap

for disposition through the opening in the plate, a threaded socket provided in the upper end of the handle for receiving the stud, and an expansible spring in said tubular member between the plate and the enlarged upper end of the handle.

2. A razor of the class described comprising in combination, a blade supporting plate having a central opening therethrough, a sleeve depending from said plate around the opening and having a restricted opening at its lower end, a cap hinged to said plate and having openings adjacent the marginal edges thereof to provide relatively narrow rims along its side edges for overlying the side edges of a blade positioned between the plate and the cap, said cap and plate being provided with interfitting raised portions and grooves, a handle having its upper part reciprocable and rotatable in said sleeve, a flange on the upper end of the handle, cooperating with the lower end portion of the sleeve to prevent disengagement of the handle from the sleeve, a threaded stud depending from the cap for disposition through the opening in the plate and extending into the sleeve, a threaded socket in the upper end of the handle for receiving the threaded stud and an expansible spring arranged in the sleeve between the plate and the flange on the handle.

In testimony whereof I affix my signature.

RICHARD G. WINKLER.