June 10, 1958 W. OSTROWSKI 2,837,820

SAFETY RAZOR WITH CLAMPED BLADE

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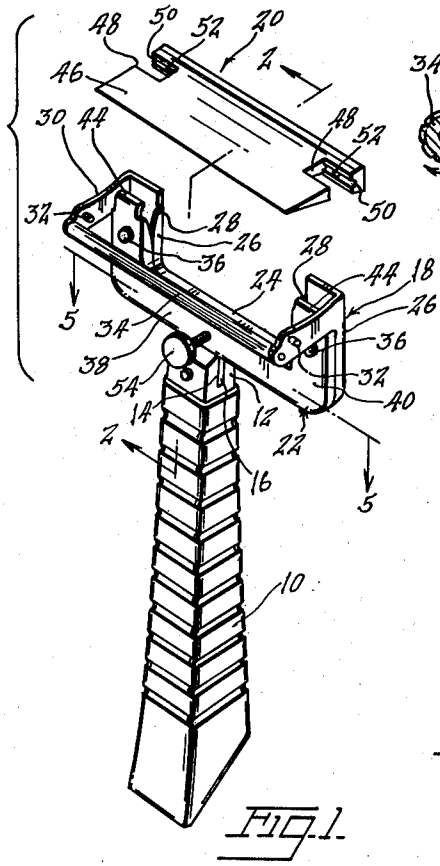


Fig. 1.

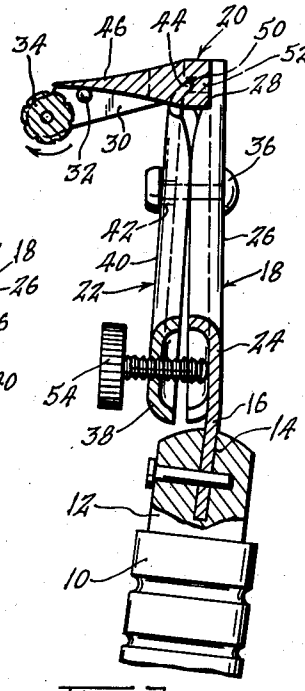


Fig. 2.

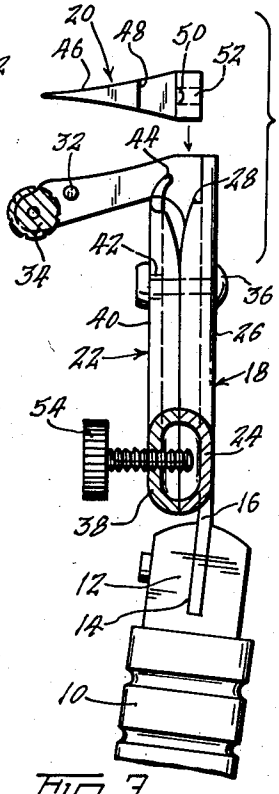


Fig. 3.

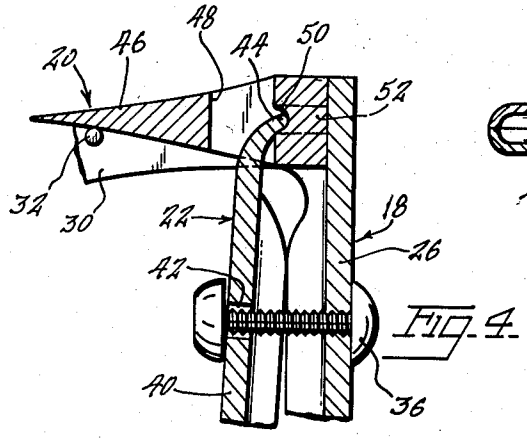


Fig. 4.

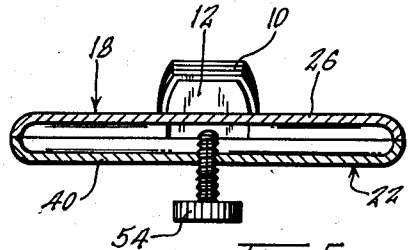


Fig. 5.

INVENTOR.
WALTER OSTROWSKI
BY
ATTORNEY

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SAFETY RAZOR WITH CLAMPED BLADE

Walter Ostrowski, New York, N. Y.

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1 Claim. (Cl. 30—51)

This invention relates to razors and, more particularly, has reference to a safety razor.

An important object of the present invention is to provide a safety razor wherein the blade is so designed as to facilitate its swift attachment to or detachment from the safety razor clamping head, with minimum difficulty and loss of time, and through the medium of a relatively simple connecting feature characterized not only by its low cost of manufacture but also by its being rugged and possessed of a minimum number of parts, so as to not get out of order readily.

Another object of importance is to provide a razor of the nature referred to which includes a blade so formed as to produce a particularly smooth and effective shaving action.

Another object is to provide, in a safety razor, a clamping head for a safety razor blade including a stationary, U-shaped support yoke on which is pivotally mounted a correspondingly U-shaped clamp the legs of which are formed with laterally projecting lips adapted, responsive to rocking of the clamp to a selected position upon the yoke, to engage in complementary recesses of the razor blade.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claim in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is an exploded perspective view of a safety razor formed in accordance with the present invention.

Fig. 2 is an enlarged sectional view on line 2—2 of Fig. 1, in which the blade is illustrated in clamped position.

Fig. 3 is a view similar to Fig. 2 in which the blade has been unclamped.

Fig. 4 is a detail sectional view, still further enlarged, showing the rockable mounting of the clamping yoke and the interengagement between the yoke and blade.

Fig. 5 is a sectional view on line 5—5 of Fig. 1.

The reference numeral **10** designates a safety razor handle, which may be formed of plastic or other suitable material, and which may have any desired configuration. In the illustrated example, the handle is progressively increased in cross-sectional area in the direction of its outer end, the outer end edge of the handle being sharply beveled as shown in Fig. 1. The handle **10**, at is upper end, is provided with an axial projection **12**, formed of metal and embedded in or otherwise fixedly secured to the inner end of the handle. The projection **12** has a transverse, upwardly opening slot **14**, and engaged in said slot is a depending tongue **16** formed upon the blade support yoke **18** of the clamping head of the safety razor. A blade **20**, to be described in detail hereinafter, is supported upon the blade support yoke **18**, and is secured fixedly in its use position by means of a

rockable clamping yoke **22** also carried by the blade support yoke.

The blade support yoke **18**, which may be appropriately termed a stationary yoke, as shown in Fig. 1 is of U-shape, having an elongated bight **24** extending transversely of the handle **10**, said bight being of channeled cross section as shown in Figs. 2 and 3 and merging at its upper ends into correspondingly channeled legs **26, 26**. The tongue **16** is integrally formed upon the web of the bight medially between the legs **26**. At their upper ends, the inner side walls of the legs, as shown to particular advantage in Fig. 1, are cut away to provide angular recesses **28**, said recesses defining horizontally disposed shoulders on which the blade **20** is adapted to rest.

Integrally formed on the upper ends of the outer side walls of legs **26** are laterally projecting guard support arms **30**, apertured at their opposite ends and provided, a short distance inwardly from the apertures, with inwardly projecting, short support lugs **32** on which the sides at the cutting edge portion of the blade **20** are adapted to be supported, with the top surface of said blade flush with the top edges of the respective arms.

Rotatably engaged in the apertures of arms **30** are reduced axial extensions or trunnions formed upon the opposite ends of a guard roller **34**, the surface of which is roughened, as by the provision of longitudinally extending, circumferentially spaced ribs. The roller **34** serves to protect the cutting edge of the razor blade and it also constitutes a guard in the sense that it serves to space the blade edge away from the user's face, during the shaving operation. It is to be understood that the roller is positioned against the fact with the blade extending obliquely to the surface of the face so as to act upon the beard when the razor is shifted downwardly. Since roller **34** is free to rotate when it is in contact with the face, it also facilitates the sliding of the razor during shaving.

Projecting forwardly from the respective arms **26**, intermediate the upper and lower ends of the arms, are rivets **36**, constituting pivot pins on which the rockable clamping yoke **22** is fulcrumed.

The rockable clamping yoke **22** is substantially coextensive in length and corresponds in general shape to the blade support yoke **18**, and thus includes a bight **38** of channel cross section, merging at its opposite ends into upwardly projecting, channeled legs **40**. Legs **40**, intermediate their ends, have openings **42** receiving the pivot pins **36** which act as a fulcrum for rocking legs **40**. The openings **42** are slightly larger in diameter than the diameter of the respective pins, to provide for a free rockable movement of the rockable clamping yoke thereupon.

At their upper ends, the legs **40** of the rockable clamping yoke are integrally formed with rearwardly projecting, transverse lips **44** adapted to clampably engage the blade **20** when said blade is supported upon the shoulders **28**.

The blade **20** includes a body **46** of tapered cross section, said body being preferably hollow ground on its opposite faces as shown to particular advantage in Fig. 1.

As shown in Figs. 2 and 3, the blade **20**, along that longitudinal edge thereof opposite the cutting edge, is of substantial thickness, with said blade tapering in the direction of the cutting edge. Adjacent the back or thickened longitudinal edge of the blade body, there are formed, in opposite ends thereof, recesses **48**, having back walls in planes paralleling the planes of the back edge surface of the blade body, said back walls having longitudinal slots **50**. Threaded openings **52**, the purpose of which will be presently made apparent, are formed

in the blade body, communicating between the back edge surface thereof and the back walls of the recesses **48**.

When the blade is to be attached to the safety razor head, it is dropped into the spaces between lips **44** and the upper ends of the legs **26**, with the clamping yoke **22** being rocked counterclockwise about its pivot **36** to the Fig. 3 position thereof. The blade will now be supported in the position shown in Fig. 2, and as a next step, the blade is clamped in position by rotation of a screw **54** in a direction to advance the same toward the blade support yoke **18**. Screw **54** is threadedly engaged in an opening formed in the bight **38** of the rockable clamping yoke, and bears against the elongated bight **24** of the blade support yoke **18**. Thus, when the screw is turned home against the bight of the blade support yoke **18**, it will cause the elongated bight portion of the rockable clamping yoke **22** to be swung outwardly from the blade support yoke **18**, and this in turn causes the rockable clamping yoke to fulcrum upon the pins **36**, to shift the lips **44** into the recesses **50** (see Figs. 2 and 4), thus causing the blade body to be shifted against the upper ends of the legs **26** to cause the blade to be securely clamped between the respective yokes, with its cutting edge portion supported upon the lugs **32**.

While I have illustrated and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claim.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

A razor comprising a handle, a recessed blade, and blade support means carried by the handle, and means on the blade support means for fixedly engaging the blade against the blade support means, said blade support means comprising a U-shaped blade support yoke fixedly connected to the handle at the bight of the blade support yoke, said blade support yoke including legs adapted at their free ends for supporting the back portion of the blade, lugs on said blade support yoke for supporting the front portion of the blade, the blade engaging means comprising a U-shaped rockable clamping yoke rockably mounted upon the blade support yoke, and a screw threadedly engaged in the bight of the U-shaped blade support yoke and adapted to bear against the bight of the blade support yoke, to rock the rockable clamping yoke in a direction to clampably engage the blade between the respective yokes, the rockable clamping yoke including curved lips formed upon the legs thereof bearing against the blade in the clamped position of the blade and received in the recesses thereof.

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