Feb. 23, 1943. N. TESTI 2,311,913

SAFETY RAZOR AND PROTECTED BLADE

Filed Oct. 4, 1941

Fig. 1

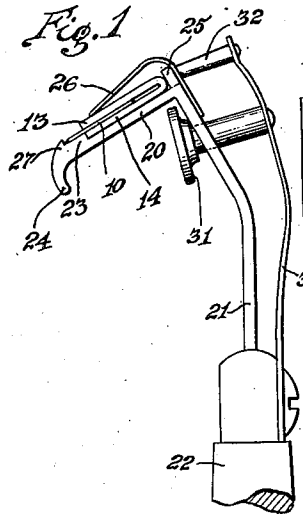


Fig. 2

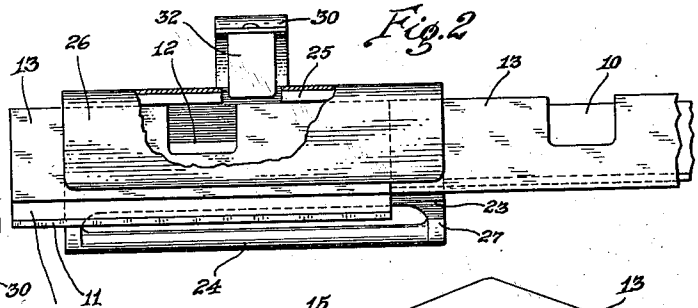


Fig. 4

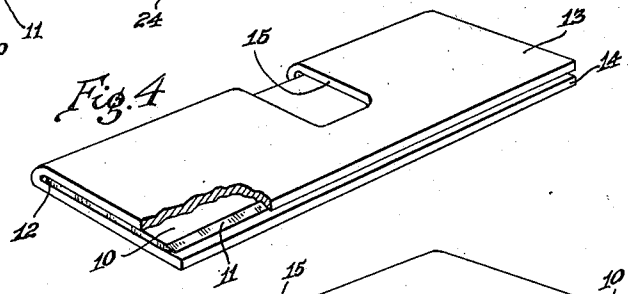
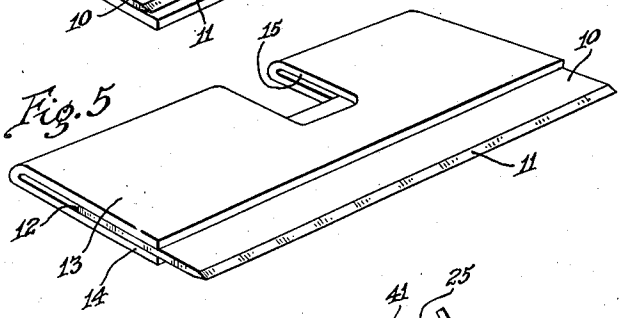


Fig. 5



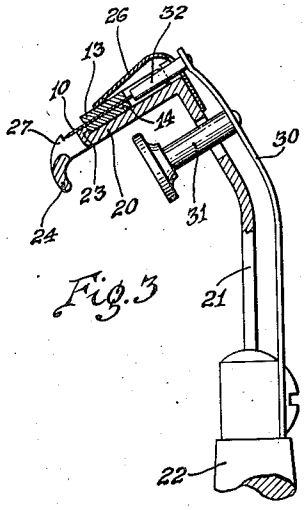
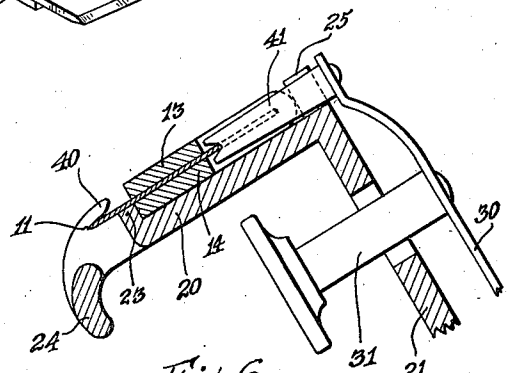


Fig. 3

Fig. 6



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SAFETY RAZOR AND PROTECTED BLADE

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Application October 4, 1941, Serial No. 413,579

4 Claims. (Cl. 30—62)

This invention relates to safety razors and in one aspect consists in a safety razor blade having a protective covering of novel form. In another aspect it consists in a novel combination of safety razor and protected blade, viz., a safety razor constructed and arranged to receive a blade with a protective cover and automatically to uncover the blade and expose its cutting edge for shaving.

In handling safety razor blades under commercial conditions of distribution and in casual handling by the user the extremely fine keen edge of the blade is likely to become dulled by being brought into contact with its wrappings or other objects before the blade can be actually clamped in shaving position in the razor. On this account the best and most skillful blade-sharpening efforts of the manufacturer are brought to be of no avail because of the difficulty of preserving intact the very fragile and delicate structure of a blade which has been brought to the keenest possible shaving edge.

With those conditions in view an important object of the present invention is to provide a safety razor blade having a novel protective cover normally projecting over its cutting edge and protecting the latter from direct contact until after the blade has been actually placed in the safety razor by the user where the edge of the blade is out of harm's way. I have discovered that these and other desirable results may be achieved by providing a protective cover in the form of sheet material shaped to enclose the blade, including its cutting edge, and with respect to which the blade may be moved in the safety razor so as to expose its cutting edge at or approximately at the time the blade is positioned in the razor for shaving.

In addition to the protective function above discussed such a protective cover may be utilized to reenforce and stiffen the blade, not only for purposes of distribution but also in shaving position in the razor. In some instances the protective cover may take the place of a cap or blade-clamping element in the safety razor. By applying a film of grease to the metal surfaces of the blade the cover may be made to cling in a flat condition to both sides of the blade thus protecting it against the dampness of the atmosphere and against electrolysis and corrosion in the razor.

In accordance with my invention I propose to use for the blade a protective cover of cardboard or other stiff but flexible sheet material such as Celluloid or thin sheet metal and I am thus enabled to provide a self-contained unit having flush surfaces that may be handled conveniently in automatic machinery or in blade magazines without danger to the blade or to the user. Moreover, by selecting various thicknesses of cover material I can provide units of uniform thickness having blades which vary in thickness throughout an appreciable range. A cover of tough flexible sheet material has the advantage that it will not tear or cut in the razor so that uniform handling and positioning of the blade itself may be reliably realized.

These and other features of the invention will be best understood and appreciated from the following description of a preferred embodiment thereof, selected for purposes of illustration and shown in the accompanying drawing, in which:

Fig. 1 is a view of a safety razor and protected blade in end elevation;

Fig. 2 is a plan view of the razor shown in Fig. 1 with parts broken away and with the blade in process of being ejected;

Fig. 3 is a view similar to Fig. 1 but with certain parts shown in cross-section;

Figs. 4 and 5 are views in perspective on an enlarged scale of the protected blade shown respectively in retracted and protruded position; and

Fig. 6 is an enlarged cross-sectional view of a modified form of safety razor showing a blade positioned therein.

The invention is adapted to many forms of single-edged blades. The blade **10** herein selected for purposes of illustration is a narrow flat single-edged blade having one edge **11** sharpened for cutting and its rear edge or back **12** unsharpened. While an imperforate blade is herein shown, any desirable perforation may appear in it and the cover may be correspondingly shaped to provide the necessary clearance.

The cover herein shown comprises upper and lower panels **13** and **14** of cardboard folded over or about the back of the blade and extending forwardly on both sides thereof to a position slightly beyond its cutting edge **11**. As already intimated the faces of the blade may be coated with grease, oil or other rust preventative which serves to maintain the panels of the cover permanently in flat condition and lightly adhering or clinging to the metal faces of the blade. The cover is provided with a rectangular notch or recess **15** located midway between the ends of the blade unit and made by cutting away the fold vertex of the cover in an area extending forwardly for approximately half the width

of the blade. Both faces and the back of the blade are thus exposed so that by suitable means the blade may be engaged and shifted in its cover.

The protected blade unit above described may be advantageously used in safety razors of various different types. That shown for purposes of illustration in Figs. 1, 2 and 3 comprises a forwardly and downwardly inclined blade-supporting member **20** merging at its rear end into an upright shank **21** which is seated in the end of a handle **22**. The blade-supporting member **20** is provided near the lower edge of its face with a longitudinal rib or shoulder **23** and near its upper edge with a longitudinal rib **25**, the said two ribs defining a blade seat in the razor for the protected blade unit. At its forward edge the blade-supporting member **20** is extended forwardly and downwardly in a curve providing a guard bar **24** and at both ends of this are located dogs or teeth **27** which constitute blade stops in that they engage the corners of the blade edge **11** and determine the shaving position of the blade in the razor.

A spring hold-down clamp or cap **26** is secured to the shank **21** and is extended over the protected blade unit into engagement with its upper surface, serving to hold it at all times with yielding pressure in place upon the blade seat.

The razor includes blade pushing or advancing means, herein shown as comprising an upright leaf spring **30** provided at an intermediate point with headed operating stud **31** which extends forwardly and freely through a perforation in the shank **21** of the blade-supporting member. At its upper end the spring **30** is riveted or otherwise attached to a blade pushing block **32** which extends forwardly and registers with an opening provided for that purpose in the back of the hold-down **26** and in the rib **25**. The block is flat enough to pass freely in the space between the cap **26** and the blade-support **20**. In Figs. 1 and 2 the blade pusher is shown as in retracted position where the user may hold it by pressing rearwardly upon the operating stud **31**. The blade pusher is held in that position during the operation of ejecting from and replacing a blade in the safety razor.

A protected blade unit may be presented to the razor by pushing it endwise upon the blade seat into the razor beneath the hold-down **26** and, when the blade is properly presented, the recess **15** in the cover is located exactly in registration with the opening in the rib **25** and with the pusher block **32**. When the protected blade unit has been so located and the operating stud **31** released by the operator the spring **30** will cause the pusher block **32** to advance and engage the back of the blade where it is exposed in the recess **15** and to push the blade forwardly in its cover or between the sides **13** and **14** of its cover. The lower cover panel **14** is held positively against forward movement with the blade by the rib **23** that defines a blade seat in the razor and the upper panel **13** is held in place by its folded connection with the lower panel and by the yielding engagement of the spring cap **26**. The rib **23** is of sufficient height to enclose the forward edge of the lower cover panel **14** but to permit the advancing edge of the blade to move freely over it. The advancing movement of the blade is continuous until the corners of its cutting edge **11** are arrested by engagement with the teeth **27** and when these are reached the blade is held in accurate shaving position and maintained in position by the constant pressure of the spring **30** acting through the block **32**. The forward movement of the blade is permitted by the clinging engagement of the oiled or greased cover panels, which, in turn, are always maintained in flat engagement with the faces of the blade.

It will be noted that the cap **26** engages the upper panel **13** of the protective cover at all times and that even in its protruded position substantially half the blade is still enclosed within its protective cover. Pressure of the cap **26** is transmitted by the panel **13** to an extended area adjacent to the cutting edge of the blade thus holding securely against vibration in the razor.

In Fig. 6 is shown an alternative form of safety razor in which the spring hold-down clamp **26** is dispensed with and other means are provided for holding the blade in shaving position. Instead of the teeth **27** which in the razor of Fig. 1 are merely abutments, the razor of Fig. 6 has overhanging hooks **40** which engage above the corners of the edge of the blade. The blade-pushing block carried by the upper end of the spring **30** in the razor of Fig. 6 is grooved or forked at its lower edge and thereby holds the back of the blade positively in its inclined position. Accordingly when the spring **30** is permitted to move forwardly and advance the block **41**, the blade edge is advanced downwardly and forwardly from the protection of the cover panels **13** and **14** until its corners have passed beneath the hooks **40**. Meanwhile the rear edge of the blade is positively held as already explained.

The precise shape of the recess or recesses in the protective cover **13—14** is of secondary importance so long as they permit the blade to be adequately engaged for the desired manipulation in the razor. While a single recess only is shown in the illustrated cover, spaced recesses may be provided and the pushing block correspondingly modified in shape, all within the scope of the invention.

It will also be apparent that any desired mechanical mechanism may be used for operating the blade pusher, if desired, in place of the spring means shown in the illustrated razor.

Having thus disclosed my invention and described two illustrative embodiments thereof in detail I claim as new and desire to secure by Letters Patent:

1. A safety razor blade having a sharp edge and an unsharpened back, together with protective sheets connected to each other across the back of the blade and normally extending at least to its sharp edge, said protective sheets having registering openings on opposite sides of the blade and substantially midway between the ends of the blade whereby the latter may be engaged and advanced to protrude its sharp edge beyond the outline of said protective sheets.

2. A safety razor blade having an edge sharpened for shaving and an unsharpened back, together with a protective cover of stiff sheet material folded over the back of the blade and held with its sides in flat clinging engagement with the flat faces of the blade, the said cover being substantially co-extensive in length with the blade, extending at its free edges slightly beyond the sharpened edge of the blade and having in the middle of its fold vertex a cut-away portion exposing a short length of the blade back and adjacent areas of both faces of the blade, whereby the blade may be engaged and slipped

forwardly within its cover to expose the whole length of the sharpened edge while maintaining a substantial portion of the blade enclosed.

3. A safety razor having opposed blade-clamping members, one of which presents an apertured rib, a blade provided with a protective cover located in contact with said rib and having a portion cut away in registration with the aperture in the rib, and means in the razor movable through said aperture to engage and advance the blade while its cover is held at rest between said blade-clamping members.

4. A safety razor having opposed members with clamping faces, one of which comprises a blade seat bounded by spaced upper and lower transverse ribs, a blade enclosed within a smooth protective cover of stiff sheet material and located in said blade seat with the lower edge of its cover held behind the lower of said ribs, and means in the razor for advancing the blade over said lower rib while its cover is held stationary thereby in the razor.

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