July 4, 1944. H. A. GUSTAFSON 2,352,785

PROTECTED OPEN-END BLADE

Filed Jan. 15, 1944

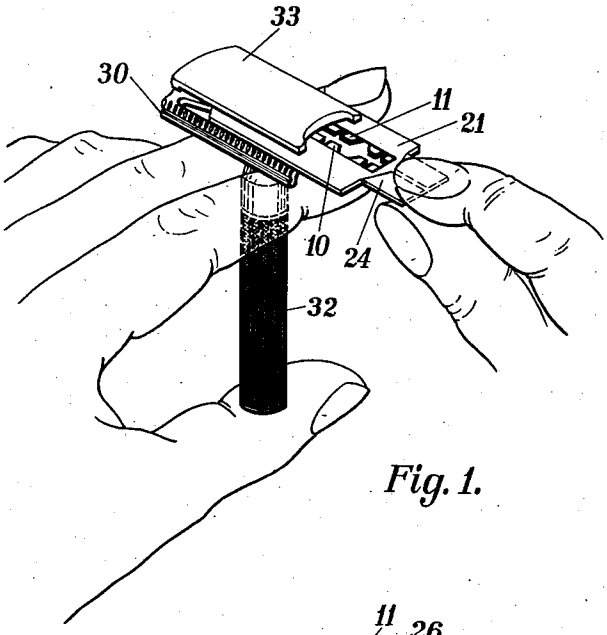


Fig. 1.

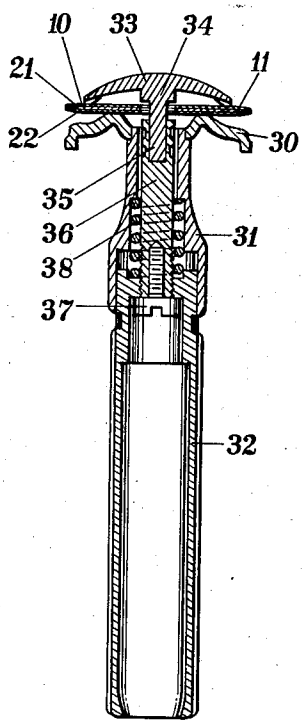


Fig. 2.

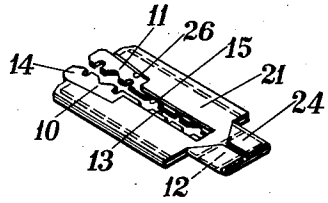


Fig. 4.

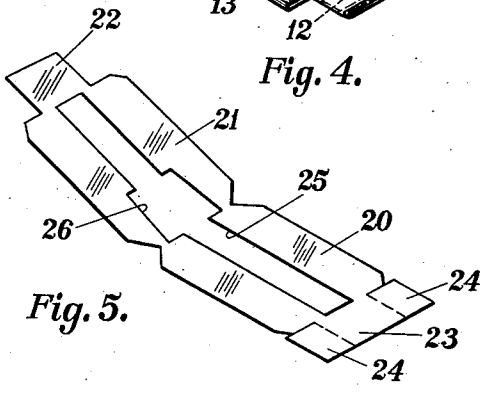


Fig. 5.

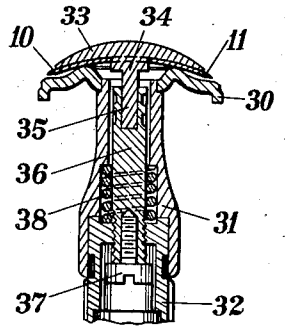


Fig. 3.

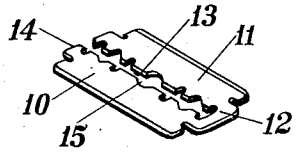


Fig. 6.

INVENTOR.
Henry A. Gustafson
BY H. A. Hemway.
ATTORNEY

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PROTECTED OPEN-END BLADE

Henry A. Gustafson, Dorchester, Mass., assignor to Gillette Safety Razor Company, Boston, Mass., a corporation of Delaware

Application January 15, 1944, Serial No. 518,318

4 Claims. (Cl. 30—123)

This invention relates to wrapping or protecting for distribution razor blades of the open-end type, that is to say, blades having two sharpened side portions separated by a longitudinal slot opening through one end of the blade. In one aspect the invention consists in an open-end blade protected by a flexible cover sheet so shaped and disposed as to permit the enclosed and protected blade to be advanced by endwise movement into shaving position between the blade-clamping members of a safety razor.

In handling safety razor blades under commercial conditions of transportation and distribution and in the more or less casual treatment of such blades by the user, the extremely fine keen edge of the blade is likely to become dulled by being brought into contact with its wrapping or with other objects before it can be actually clamped in shaving position in the razor. On this account the best and most skillful efforts of the manufacturer in sharpening blades are often brought to naught because of the damage done to the very fragile and delicate structure of the blade edge after it has been brought to the keenest possible shaving condition and before the shaving operation is actually undertaken.

While safety razor blades having closed or solid ends have been heretofore protected by cover sheets of various shapes, the present invention solves for the first time the problem of adequately protecting blades of the open-end type so that they may be readily and conveniently presented by endwise movement to a razor in which the blade-clamping members are not completely detachable but are connected for only a limited separation to receive a blade between them.

It is frequently desired to present the protected blade fully in shaving position before in any way removing or disturbing the protective cover and many safety razors are provided with detaining means for holding a protected blade in its final position in the razor while the protective cover is stripped from the blade. As one of its features the present invention facilitates this mode of blade handling by providing a protective cover which is folded over one end of the blade upon both sides of the blade slot, being itself apertured to clear the blade slot or any intermediate enlargement thereof and thereby permitting the blade to be engaged and held by suitable means operating consequently without any interference whatever from the protective cover of the blade.

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 in perspective of a safety razor, illustrating the step of presenting a protected blade thereto;

Fig. 2 is a view of the razor in longitudinal section, showing the protected blade in its position of presentation;

Fig. 3 is a similar view of the razor head, showing the blade clamped in shaving condition;

Fig. 4 is a view in perspective of a protected open-end blade;

Fig. 5 is a view in perspective of the blank from which the protective cover is formed; and

Fig. 6 is a view in perspective of the bare blade.

In Fig. 6 is shown an open-end blade of commercial construction, such as it is desirable to protect by the invention of this application, although it will be understood that the invention is not limited to this or to any particular style of open-end blade but is general in its application. The blade is constructed of thin sheet steel usually from .004" to .007" in thickness. It is substantially rectangular in outline, sharpened at its two outer edges and suitably hardened and tempered. It is provided in each corner with a reentrant notch and these define at one end of the blade an elongated unsharpened end portion 12 constituting a hinge between the two side portions 10 and 11. The hinge portion 12 is usually annealed and softened as compared to the body of the blade so that it may be flexed without danger of cracking. The two side portions 10 and 11 are separated by a medial slot or elongated aperture 13 which opens out through the elongated unsharpened end portion 14 at the left-hand end of the blade as seen in Fig. 6. The slot 13 is provided with several intermediate enlargements designed to fit blade-locating projections of different shapes found in various safety razors, and has also a central circular enlargement 15 to accommodate the stem of the cap as will presently appear.

The protective cover or wrapper herein shown is preferably formed from a flat blank of paper, foil or other fabric shaped as suggested in Fig. 5. The blank has two leaves or panels 20 and 21, shaped to be folded about a transverse axis to receive the blade of Fig. 6 between them. The blank is centrally notched in its edges to define a transverse fold line therein and for the purpose of reducing its width. The leaf 21 is pro-

vided with a rectangular tongue 22 at its outer end which is substantially the width of the solid hinge portion 12 of the blade. The leaf 20 is provided at its outer end with a tongue 23 of similar shape and ears 24 are defined at opposite sides of the tongue 23. The blank as a whole is provided with a central longitudinal slot 25 which extends throughout the length of the blank substantially to the roots of the tongues 22 and 23. Included in the length of the slot 25 is a trapezoidal enlargement 26 which is disposed adjacent to the fold line in the leaf 21 and is of such width as to provide clearance for the divided end portion 14 of the blade.

The blade is placed flatly upon the leaf 20 of the cover blank, with its solid end portion 12 overlying the inner portion of the tongue 23 and its divided end portion projecting beyond the inner edge of the enlarged aperture 26 of the leaf 21. The leaf 21 is then turned upwardly and folded over the shoulders of the blade upon both sides of the divided end portion 14. The tongue 22 is brought into superposed relation to the solid end portion 12 of the blade, and then the ears 24 are folded upwardly and inwardly. When adhesively secured in place they operate to hold the blade securely within its cover with both of its sharpened edges lying well within the margins of the cover and with the blade slot 13 and its intermediate enlargements fully exposed within the boundaries of the slot 25 and its enlargement 26 in the cover. The tongues 22 and 23 and the ears 24 provide the protected blade with a projecting handle or finger tab extending outwardly beyond the hinge portion 12 of the blade.

It will be understood that the cover thus formed may be removed from the blade at any time by merely pulling the cover endwise by its finger tab which includes the tongues 22 and 23 and the ears 24. This causes the cover to rupture along its fold line over the shoulders at the other end of the blade where the effective width of the cover is already reduced by the external notches and the internal aperture 26.

As already pointed out it is advantageous to remove the protective cover only when the blade has been fully inserted in the razor in which it is to be used, and in Figs. 1–3 is therefore shown one suitable type of razor. It will be understood, however, that the blade herein disclosed is not limited to use in the illustrated razor or in safety razors of any particular construction or type.

The safety razor shown in Figs. 1–3 comprises a guard member 30 substantially rectangular in outline having downturned guard bar portions and a blade-engaging face which is substantially convex in transverse contour. It is permanently connected to a tubular ferrule 31 which in turn is rotatably connected to the barrel 32 of the handle. Cooperating with the guard member 30 is a cap member 33 somewhat narrower than the guard member and having a concave blade-engaging face which cooperates with the face of the guard to impart a transverse curvature to the blade when the cap and guard are drawn together in blade-clamping relation. The cap is provided on its concave face with a circular projection 34 adapted to fit within the circular aperture 15 of the blade when the blade is bowed into contact with the cap. The cap also has a downwardly projecting stem 35 which is permanently connected to a spindle 36 threaded at its lower end for connection with the barrel 32 of the handle. A stop screw 37 is threaded into the lower end of the spindle 36 and limits the separation of the cap and guard members of the razor to substantially the amount shown in Fig. 2, that is to say, to a space just sufficient to receive the protected blade when advanced endwise in flat condition between them. A compression spring 38 located in a chamber formed for that purpose in the ferrule 31 tends always to move the cap and guard toward each other. The approaching movement of the cap and guard may be opposed by the fingers of the user, as suggested in Fig. 1, when it is desired to present a protected blade to the razor or remove it therefrom. The razor described is not herein claimed but constitutes the subject matter of co-pending application, Ser. No. 509,970, Lewando, November 12, 1943.

In presenting the protected open-end blade of Fig. 4 to the razor of Figs. 1–3 the user may support the guard member 30 with his first and second fingers and press upwardly with his thumb upon the end of the barrel 32 as suggested in Fig. 1. The cap 33 is thus separated from the guard 30 sufficiently to permit the convenient insertion of the protected blade in flat position by endwise movement between the parts of the safety razor. In this operation the slot 13 of the blade affords clearance for the stem 35 of the cap. When the blade has been fully presented its circular aperture 15 will register with the circular projection 34 on the inner face of the cap. When pressure is released upon the handle of the razor the spring 38 immediately moves the cap and guard members together with sufficient pressure to bow the protected blade transversely and thus fit its aperture 15 upon the projection 34 of the cap. The blade is now held positively against endwise movement and the user has only to grasp the folded end of the protective cover and pull the cover outwardly, rupturing it along its fold line and stripping it completely from the blade. He may now complete the blade-clamping operation upon the bare blade and thus secure it fully in shaving condition without the possibility of any detrimental contact with the sharpened edges of the blade.

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

1. A protected open-end blade internally apertured for engagement with locating projections of a safety razor and having an elongated unsharpened portion at each end, one of which is divided by the aperture of the blade, and a cover sheet folded over the divided end portion and being itself apertured to clear the aperture of the blade.

2. A protected open-end blade having sharpened side portions separated by a longitudinal slot opening through one end of the blade, and a cover sheet folded over that end of the blade and being slotted to clear the slot of the blade at its open end.

3. A thin flexible blade with a medial longitudinal slot which opens into one end of the blade and has a medial local enlargement, the blade being enclosed in a flexible wrapper which also has a medial longitudinal slot opening into the corresponding end of the wrapper.

4. A thin flexible safety razor blade of the kind intended to be flexed between clamping members for shaving, having corner recesses and a medial longitudinal slot opening into one end of the blade and protected by a wrapper having a longitudinal medial slot opening into the corresponding end of the wrapper so that the wrapped blade can be advanced endwise into a razor between the

blade-clamping members thereof, the slot in the blade having local enlargements which enable the wrapped blade to be effectively fitted to the blade-locating projection of a razor and at least one of which, when the wrapped blade has been advanced endwise between the clamping members of a razor and bowed, interlocks with a blade detaining part of such a razor, the slotted wrapper being so formed that in the said razor the wrapper can be slipped off the blade and the latter left behind in the razor ready for clamping, the wrapper being folded over the transverse shoulders of the corner recesses in one end of the blade and the free ends brought together to form a finger tab projecting beyond the other end of the blade and said wrapper being formed so that it ruptures on the fold line when it is pulled off the blade.

HENRY A. GUSTAFSON.