April 22, 1941. J. MUROS 2,239,536

PROTECTED BLADE

Filed Oct. 12, 1939

Fig. 1

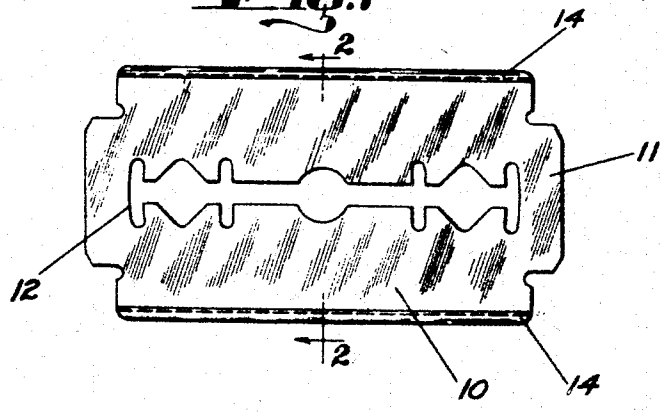


Fig. 2

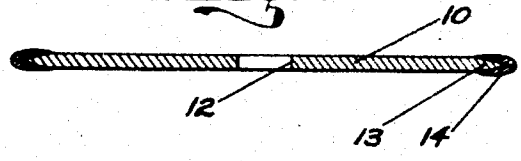
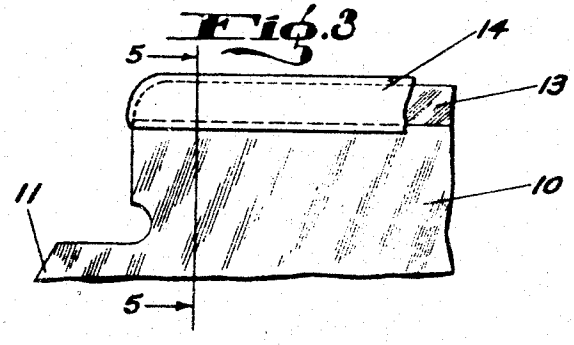


Fig. 3



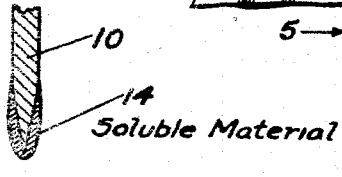


Fig. 5

Fig. 4



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Patented Apr. 22, 1941 2,239,536

UNITED STATES PATENT OFFICE

2,239,536

PROTECTED BLADE

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Application October 12, 1939, Serial No. 299,120

2 Claims. (Cl. 30—151)

This invention relates to fine edge blades, such for example, as safety razor blades and consists in a novel structure which is effective for protecting any fine sharp cutting edge against corrosion and against accidental damage or impairment between completion of its manufacture and of actual use, as in shaving.

Manufacturers of fine edged blades by modern methods of production are able to provide extremely thin sharp cutting edges, but a necessary concomitant of the characteristics of this extreme sharpness is delicacy of structure in the cutting edge itself. It is accordingly a serious problem to protect the cutting edges of such blades from corrosion and from mechanical damage during the process of distribution. It is the practice to protect the body of safety razor blades by a coating of impervious lacquer and, while this is entirely effective in protecting the body of the blade, it does not extend to the bright metal of the bevelled edge which is laid bare by the grinding, stropping and honing operations. Such blades are, therefore, exposed to atmospheric conditions in their most vital parts and a relatively slight amount of rust formed on the cutting edge due to atmospheric moisture very seriously impairs the fine shaving characteristics of the blade. The danger of mechanical damage is also ever present, since the mere contact of the fine sharp edge with wrapping material or with any part of the razor tends to blunt the extreme edge thereof.

The object of the present invention, as before intimated, is to protect effectively fine edge blades against these dangers and to accomplish certain other very desirable objects which will be hereinafter referred to. I have discovered that all these ends may be achieved by surrounding the bevelled or sharpened edges of the blades by a sheath or bead which may be removably attached to the blade as soon as its cutting edge has been completed and removed only after the blade has been safely located in the razor or other holder in which it is to be used.

The protecting sheath or bead may advantageously comprise any readily softenable or soluble material which is otherwise qualified for the desired protective functions. I have in mind employing a gelatin solution of the proper consistency to form a rounded bead when the sharp edge of a blade is withdrawn after being dipped therein and which will solidify almost immediately when exposed to the atmosphere or a drying oven. A particular advantage of using such material as gelatin for a protective bead or sheath is that it is very readily soluble in hot or cold water so that the user has only to clamp his protected blade in shaving position in his safety razor and then by rinsing it in water, either hot or cold, can instantly remove the protecting bead exposing the fine sharp edge of the blade in the same perfect condition in which it came from the sharpening instrumentalities of the manufacturer. Other materials such as melted sugar, tapioca, beeswax, paraffin, etc., or combinations of these and other materials may be employed. It is contemplated that a formula may be selected that will produce a sheath which is transparent or opaque, colored or colorless as desired. All of these have the desired properties of adhesiveness facilitating attachment; they are adequate to protect the edge against corrosion; they have sufficient stiffness when solidified to protect the edge against damage; and finally they are all softenable by heat or soluble in water.

In addition to the advantages above discussed a sheath or bead applied in accordance with my invention positively prevents contamination of the cutting edge of a blade so that, if sterilized in the course of manufacture as is the present good practice, the user may have the assurance that the blade reaches him in aseptic condition thus relieving him of any possibility of face infection. The sheath not only protects the keen shaving edge of the blade from damage but also protects the fingers of the user so that he may remove the blade from its wrapping and place it in the holder without danger of cutting himself. This is particularly so when the bead is given a rounded contour, a condition which is noticeable when the blade is handled.

Further, the protective bead or sheath constitutes a positive indication that blades thus equipped are new blades and not used blades since the sheath must be fully removed for use and cannot be restored when it has once been removed. Finally, a colored sheath may be utilized as a means of dressing up the blades to give them an attractive appearance in the eyes of the purchaser.

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

Fig. 1 is a plan view of a commercial safety razor blade, shown on an enlarged scale, as being provided with a protective bead of my invention;

Fig. 2 is a view in cross-section on the line 2—2 of Fig. 1;

Fig. 3 is a fragmentary plan view on a still larger scale;

Fig. 4 is a sectional view corresponding to Fig. 2, showing part of a blade provided with alternative form of protecting sheath; and

Fig. 5 is a fragmentary view in cross-section shown on the line 5—5 of Fig. 3.

The blade shown in Fig. 1 is typical of commercial safety razor blades now widely distributed in the market. It has corner notches defining central elongated unsharpened portions 11 and an elongated centrally disposed aperture of conventional shape. It is sharpened upon its opposite longitudinal edges 13 by symmetrical bevels ground in the body of the blade and showing bright steel in the finished blade. The body 10 of the blade is usually protected by lacquer or an oxidized coating or both but as already explained this terminates at the line of bevel. As shown in Figs. 1–3 both cutting edges 13 of the blade are surrounded by a protecting sheath or bead 14 which in this case may be transparent gelatin of any attractive color harmonious with the rest of the blade surface.

The sheath or bead 14 may be applied to the blade by dipping its bevelled edge in a suitable bath of viscous solution, such as gelatin. The liquid solution adheres first to the dipped surface of the blade and then by capillary action or surface tension takes of itself a rounded contour completely surrounding and encasing the bevelled edge of the blade and, when solidified, forming a continuous channelled-shaped bead extending from end to end of the cutting edge 13 and over the cutting edge to a substantial thickness. A gelatinous solution on the blade edge, when once dried and hardened, adheres securely to the steel of the blade as a transparent sheath and is not likely to be disturbed in any ordinary handling of the blade. It has sufficient strength of structure to protect the blade against mechanical damage. It is sufficiently flexible to flex with the blade without cracking and it is sufficiently impervious to moisture to eliminate the danger of corrosion. On the other hand, it is very readily soluble in water and may be removed from the blade edge in a few seconds by being rinsed in water.

In Figs. 1, 2 and 3 the protecting sheath or bead 14 is shown as being substantially co-extensive in width with the bevelled edge 13 of the blade, that is, the bead extends to the line of bevel and slightly beyond, overlapping the lacquered blade surface and leaving no break exposing bright metal. In Fig. 4, however, a blade 20 is shown as provided with a continuous coating which includes the protective beads 21 in which the opposite cutting edges of the blade are embedded. The protected blade of Fig. 4 may be produced by dipping the whole blade as distingushed from dipping merely its bevelled edge as suggested in Figs. 1–3.

In applying the protective bead or sheath to the blades of Figs. 1 and 5 it is necessary only to dip the edges of the blades while held vertically into a hot viscous or gelatinous solution. The depth of the dipping governs the amount of solution picked up by the blade edge. While the blade is held vertically the solution tends to run down and form itself into a bead or sheath of slightly bulging cross-section. In practice the thickness of the sheath should not substantially exceed the thickness of the blade body and under such conditions the protected blades may be handled and wrapped by automatic machinery as rapidly and conveniently as unprotected blades.

While I prefer that the protective sheath should be removed by rinsing the blade in the razor in water, the sheath may be made so soluble that it will be softened and detached from the blade edge by being merely applied to the lathered face of the user. A paraffin sheath is softened and detached from the blade by the action of heat with or without moisture.

The present invention includes within its scope the novel process herein disclosed of protecting the sharp edges of blades by dipping the same or otherwise forming thereon a continuous solid sheath of soluble or softenable material from a viscous or gelatinous solution.

Having thus disclosed my invention and described certain preferred embodiments thereof I claim as new and desire to secure by Letters Patent:

1. A flexible razor blade having a ground bevel exposing the bright steel of the blade and presenting a sharp cutting edge and a protecting rounded bead of soluble transparent material enclosing the bright steel of the blade and providing a flexible sheath protecting it against corrosion and its sharp edge against mechanical damage.

2. A thin flexible safety razor blade having a body of uniform thickness provided with a protective coating, and a bevelled cutting edge free of said coating and protected by an adhering flexible rounded bead normally firm in structure but capable of being readily detached from said cutting edge by the action of heat.

JOSEPH MUPOS.