

June 8, 1943.

F. J. ARDNER

2,321,351

SAFETY RAZOR

Filed April 11, 1940

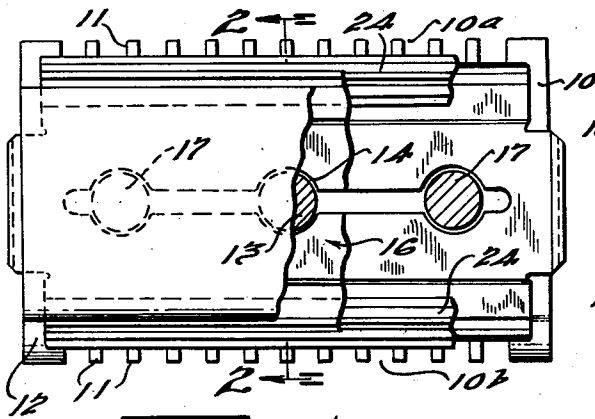


FIG. 1.

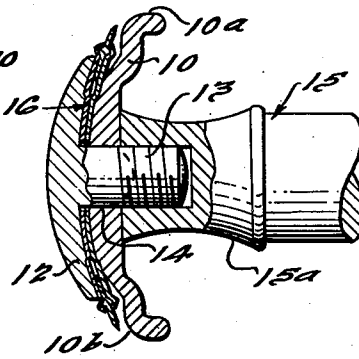


FIG. 2.

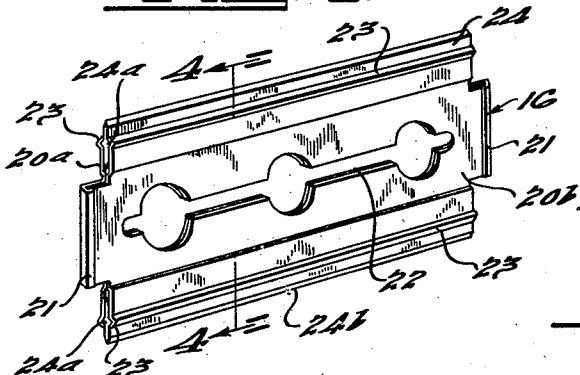


FIG. 3.

FIG. 4.

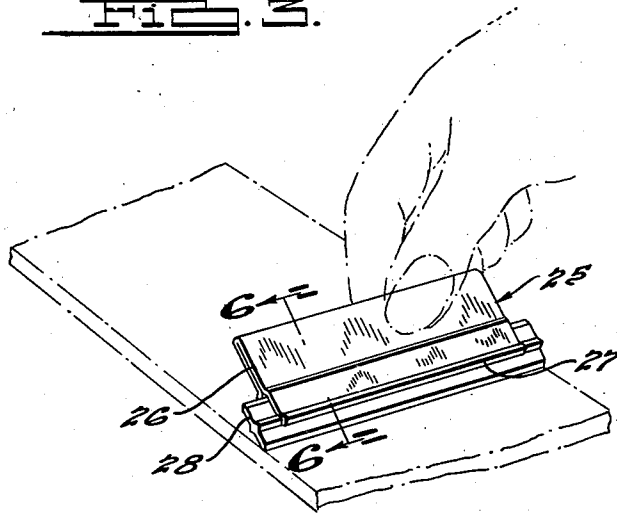
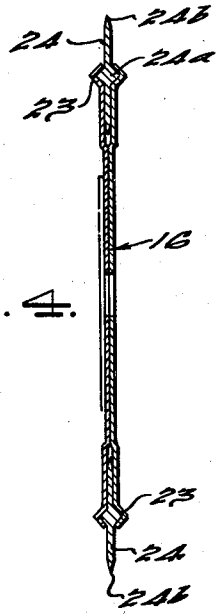


FIG. 5.

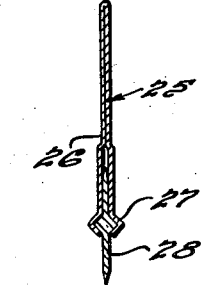


FIG. 6.

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UNITED STATES PATENT OFFICE

2,321,351

SAFETY RAZOR

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Application April 11, 1940, Serial No. 329,046

4 Claims. (Cl. 30—70)

This invention relates to razors and more particularly to an improved safety razor and a blade therefor.

One of the objects of the present invention is to provide an improved safety razor and a built-up blade therefor having interchangeable cutting edges or bits.

Another object of the invention is to provide a safety razor and a blade therefor, which may be readily disassembled into separate parts which may be easily cleaned or sterilized.

A further object of the invention is to provide an improved razor blade bit which because of its improved construction may be made at a very low cost from the best steel to give a very sharp and durable cutting edge.

A still further object of the invention is to provide an improved razor blade bit and a holder therefor, thus providing a built-up safety razor blade which in its operation and appearance resembles a conventional blade, but which permits removal of its cutting bits for sharpening, honing, or replacement.

A still further object of the invention is to provide an improved built-up or articulated blade having interchangeable cutting edges, which blade may be used in known types of existing safety razors.

An additional object of the invention is to provide an improved razor blade of the foregoing character, which blade is simple in construction, safe and sanitary in use, and is relatively inexpensive to manufacture.

The present application is related to my co-pending applications Serial Nos. 329,045 and 329,632, and to the application of Leonard A. Young Serial No. 329,019.

Other objects of this invention will appear in the following description and appended claims, reference being had to the accompanying drawing forming a part of this specification wherein like reference characters designate corresponding parts in the several views, and in which

Fig. 1 is a top view partly in section of a safety razor with a blade embodying the present invention;

Fig. 2 is a transverse sectional view of the razor and the blade, said view being taken in the direction of the arrows on the section plane passing through the line 2—2 of Fig. 1;

Fig. 3 is a perspective view showing one built-up blade separately;

Fig. 4 is a transverse sectional view of the blade, said view being taken in the direction of the arrows on the section plane passing through the line 4—4 of Fig. 3;

Fig. 5 is a perspective view illustrating a built-up blade holder of a modified construction, the bit being shown in the process of honing; and

Fig. 6 is a transverse sectional view of the blade shown in Fig. 5, said view being taken in the direction of the arrows on the transverse section plane passing through the line 6—6 of Fig. 5.

Before explaining in detail the present invention it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawing, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation, and it is not intended to limit the invention other than by the scope of the subjoined claims.

In the drawing there is shown by way of example a built-up blade embodying the present invention, the same being shown in connection with a known double blade type of safety razor holder. The blade herein illustrated and described is adapted for use in the safety razor herein shown. It will be understood, however, that numerous modifications in the blade for adapting it to safety razors of various designs may be made without departing from my inventive concept. For example, slots and holes of various configurations for holding the blade in a razor may be cut in a blade in order to adapt the same for use in a particular type of safety razor. Instead of holes, beads, hooks, or the like may also be provided.

Referring to the drawing, the safety razor illustrated therein comprises a base piece 10 having two working sides 10a and 10b along which protective lugs 11 are provided. The base piece cooperates with a guard 12 adapted to fit over the base piece 10 and having an externally threaded extension 13 passing through a central hole 14 of the base piece 10 and engaging an internally threaded member 15a forming a part of a handle designated generally by the numeral 15. When the handle 15 is turned, the guard 12 is drawn against the base piece to hold securely in place the blade generally indicated by the numeral 16 or to push said guard away from said base piece for disassembling the razor. In order to prevent undesirable relative rotation of the base piece 10 and the guard 12, the guard 12 is provided with two guide lugs 17 adapted to enter suitable holes (not shown) in the base piece 10.

The blade 16 comprises generally a holder and interchangeable cutting edges adapted to be held therein. In the present embodiment, the holder comprises two substantially similar pieces 20a and 20b, said pieces being connected together in any suitable manner such as by providing a locking flange 21 on the piece 20a adapted to overlie

the edges of the piece 20b. The holder is pierced to provide a slot 22 of any desired shape for accommodation of the blade in a safety razor of a particular type.

Along the sides of the holder the pieces 20a and 20b are bent to provide ways 23 adapted to receive the raised beads 24a of the interchangeable cutting edges or bits 24.

The cutting bits 24 each comprise a relatively narrow strip of metal having sharpened edges 24b. The bits may be inserted into the holder from its sides by directing the raised beads 24a into the ways 23 and applying light pressure on the end of the bit. The holder half-pieces 20a and 20b have sufficient resiliency to pinch the cutting bits 24 and to hold them in place, preventing their falling out or sliding in the ways 23.

The cutting bits 24 may be removed from the holder for turning the sharp edge outwardly and concealing the dull edge within the holder or for interchanging the cutting bits. Changing of the bits requires pulling them from the holder and inserting new bits thereinto.

From an examination of Fig. 3 it will be seen that the built-up razor blade embodying the present invention resembles in its appearance a conventional razor blade usually made of very thin sheet steel, and that it may be used in conventional razors. Provision of the interchangeable cutting edges or bits permits economical use of the blade in that a total of four cutting edges is provided as against the two cutting edges provided in razor blades of conventional design. In view of the fact that the holder is used repeatedly and only the small cutting bits are replaced and discarded from time to time, a considerable saving in steel is effected over the use of blades of conventional design in which the entire blade is replaced and discarded. In addition, the bit holder may be made of a relatively low grade steel or other relatively inexpensive materials since it does not in itself perform any cutting function and no cutting edges have to be formed thereon. On the other hand, the interchangeable bits 24 may be made of relatively high-grade steel enabling formation thereon of very dependable and durable cutting edges.

Since the blade 16 resembles in its appearance and dimensions a conventional razor blade, it may be readily honed in devices used for such blades.

Figs. 5 and 6 illustrate a blade holder having only one working side and adapted to hold only one interchangeable two-side cutting bit. As shown in Figs. 5 and 6, the blade holder 25 illustrated therein comprises a holder 25 made of a single piece of sheet metal turned upon itself to form two blade-holding lips, said lips being formed by stamping to provide along their working sides ways 27 similar to ways 23 of the structure shown in Figs. 3 and 4. A cutting bit 28 held by said lips is similar to the cutting bits 24 of the structure of Figs. 3 and 4. With a blade of such a construction its honing may be accomplished by hand on any suitable honing member in the way indicated in Fig. 5.

It will be observed that the construction of each of the bits 24 is such that they may readily be formed of a relatively thick metal stock and thus provide a cutting edge of increased rigidity over conventional types of safety razor blade cutting edges. The increased thickness of the metal stock also permits the shaping of the actual cutting edge to correspond to a hollow ground

cutting blade, which shape, as is known, provides a very satisfactory cutting edge. In addition, the raised beads 24a extending longitudinally of each bit 24 act to further stiffen each bit. The holder is so formed as to be relatively more resilient than are the bits 24 and thus the built-up blades of the present invention possess the desired properties of a readily flexible and resilient body portion and rigid cutting edge portions. The result of this combination of features is a more efficient shaving blade than has heretofore been provided. Also it is to be noted that the construction here disclosed provides in a preferred embodiment a total of four separate shaving edges in each blade, any one of which is readily available to the user. It is to be understood that the particular form of cutting bit here shown is but one preferred type of such bit which may be used and that other forms of bits, such for example as several of the forms shown in my co-pending related application Serial No. 329,632, may be used in place of the bits here shown.

I claim:

1. A safety razor blade comprising a relatively resilient clamping member forming the body portion of said blade and comprising a pair of detachably interlocked relatively thin resilient metal plates formed to provide a longitudinally extending clamping channel on each longitudinal edge thereof each of which is adapted to removably hold a cutting bit, and a relatively rigid interchangeable cutting bit secured in each of said clamping channels.

2. A safety razor blade comprising a relatively resilient clamping member forming the body portion of said blade and comprising a pair of detachably interlocked relatively thin resilient metal plates formed to provide a longitudinally extending clamping channel on each longitudinal edge thereof, each of which is adapted to removably hold a cutting bit, and a relatively rigid interchangeable cutting bit secured in each of said clamping channels, said cutting bit comprising a body portion having a cutting edge formed on each longitudinal edge thereof and an intermediate longitudinal bead engaged by one of said clamping members thereby to hold said cutting bits in said body portion and to expose one cutting edge of said bit and to enclose the other cutting edge thereof in said holder and out of blade dulling contact therewith.

3. A safety razor blade comprising spaced relatively resilient, longitudinally stiffened, clamping ways extending along each longitudinal edge of the body portion of said blade, and a relatively rigid, interchangeable cutting bit having an intermediate longitudinal bead thereon and removably secured in each of said ways by a resilient gripping contact between said ways and said intermediate longitudinal bead.

4. In a safety razor including a blade holding head and a handle adapted to be connected to said head; a built-up blade adapted to be held in said head, said blade comprising two opposed sheet metal pieces detachably connected together, opposed channels formed on said pieces along the longitudinal edges thereof, each pair of said channels comprising a longitudinal bit-holding way, and a cutting bit having an intermediate longitudinal bead inserted into each of said channels and removably held therein by frictional contact between said way and said bead.

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