July 26, 1966 H. F. TOMEK 3,262,206

RAZOR BLADES

Filed April 6, 1964

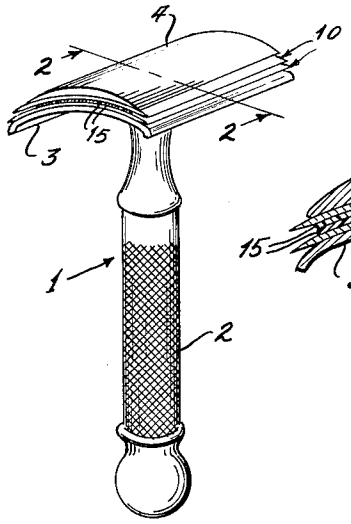



FIG.1

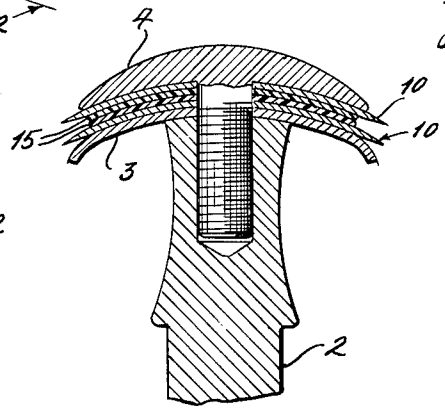



FIG.2

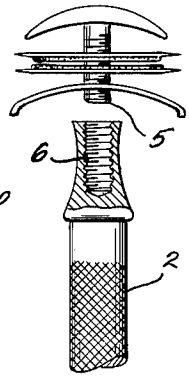



FIG.3

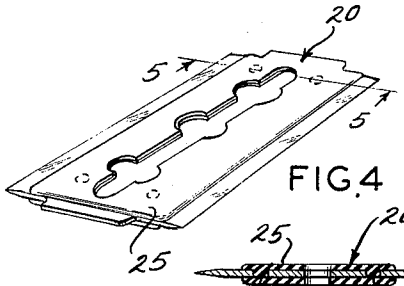



FIG.4




FIG.5

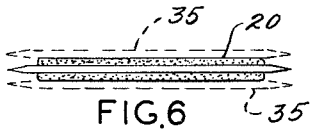



FIG.6

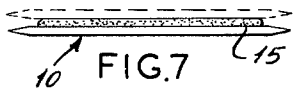



FIG.7

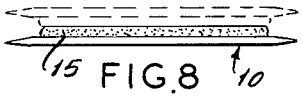



FIG.8

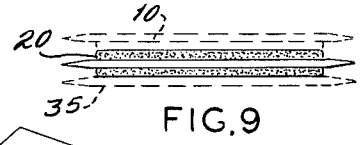



FIG.9

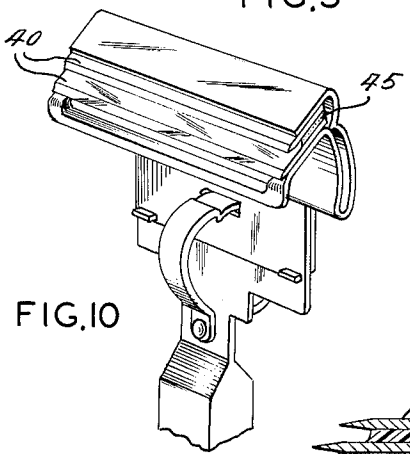



FIG.10

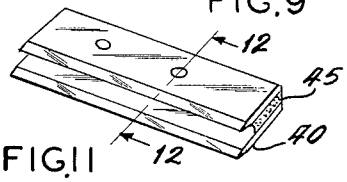



FIG.11

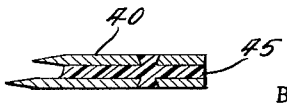



FIG.12

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# RAZOR BLADES

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1 Claim. (Cl. 30—346)

This invention relates to razor blades adapted to be used in stacked relation to provide plural cutting edges.

Advantages in plural cutting edges in shaving have been recognized for many years (cf. Patents No. 869,748, Steinharter, 939,400, Diebel, 941,231, Cupelli, 1,024,509, Harrison, 1,633,139, Staats-Oels, 1,911,378, Martin, 1,920,711, Pelizzola, 2,044,698, John, 2,658,271, Bronish and 2,741,839, Hulverscheidt, among others).

Heretofore, however, the means proposed for providing such cutting surfaces have presented certain practical difficulties, chiefly in requiring special blade holders for conventional blades or else special blades, most of which were not adapted for use with conventional holders or to use as single edge-presenting blades.

One of the objects of this invention is to provide a razor blade which can be used interchangeably with conventional blades and in conventional razor blade holders to present either a single edge or a plurality of edges of various spacings, which is inexpensive to manufacture and effective in use.

Other objects will become apparent to those skilled in the art in the light of the following disclosure and accompanying drawing.

In accordance with this invention, generally stated, a razor blade is provided with a plastic spacer bonded to the blade in such a way as to permit the blade's use in a conventional razor blade holder either singly, as a conventional blade, or in conjunction with other blades of this invention or with conventional blades, to expose a plurality of edges for use. In still another embodiment, a double edge-presenting blade is provided for use in injection type single edged razors.

In the drawing, FIGURE 1 is a view in perspective of a conventional razor blade holder provided with razor blades of this invention;

FIGURE 2 is a fragmentary sectional view taken along line 2—2 of FIGURE 1;

FIGURE 3 is an exploded view, in side elevation, of the razor shown in FIGURES 1 and 2;

FIGURE 4 is a view in perspective of one embodiment of blade of this invention;

FIGURE 5 is a sectional view taken along the line 5—5 of FIGURE 4;

FIGURE 6 is a view in side elevation of the blade shown in FIGURES 4 and 5, showing its use with two conventional blades indicated in dotted lines;

FIGURE 7 is a view in side elevation of another embodiment of blade of this invention with a single spacer element showing its use with one conventional blade indicated in dotted lines;

FIGURE 8 is a view in side elevation of two blades of the same construction as the bottom blade in FIGURE 7, one of which is shown in dotted lines to illustrate another possible combination;

FIGURE 9 is a view in side elevation showing a blade of the type shown in FIGURE 4, with a conventional blade in dotted lines on one side, and a blade of the type shown in FIGURE 7 on the other, also in dotted lines;

FIGURE 10 is a fragmentary view in perspective showing still another embodiment of blade of this invention in an injection type razor blade holder;

FIGURE 11 is a view in perspective of the compound blade shown in FIGURE 10; and

FIGURE 12 is a sectional view taken along the line 12—12 of FIGURE 11.



Referring now to the drawing and particularly to FIGURES 1–3, 7 and 8 for one illustrative embodiment of this invention, reference numeral **1** indicates a conventional double-edged razor blade holder with a handle **2**, a blade platform **3** and a blade clamp **4**. The blade clamp **4** can be made in any conventional way. In this embodiment, it is shown as a one-piece transversely curved plate with an externally threaded stud **5** projecting from its concave face. The stud **5** is removably received into an internally threaded socket **6** in the end of the handle. In the embodiment shown in FIGURES 1–3, two blades **10** are clamped in stacked relation in the holder.

Each of the blades **10** has a band of plastic **15** bonded to one side face of the blade. The thickness of the plastic band **15**, and its width, is of great importance. Preferably, the thickness of the band is in the range of .003 of an inch to .012 of an inch. The width of the band **15** must be such as to ensure that the clamp does not act to reduce the desired spacing between blade edges when the blades are stacked and clamped, and to ensure that the pressure of the clamp is exerted on the lower blade as well as the upper blade.

It can be seen that the plastic **15** must be sufficiently resilient to accommodate the forces of tension and compression which will be exerted upon it when the normally flat blade is clamped in a transversely arcuate position. At the same time, the plastic must be sufficiently rigid to withstand the compressive force of the clamp. However, with the broad surface area provided, this latter requirement is not at all difficult. Numerous suitable plastics are available and in common use. The epoxy resins used in coating stator cores, polyethylene, certain polyurethanes and the like are well known.

As shown in FIGURES 4–6, a band **25** can be provided on each flat face of a blade **20**. In this embodiment, it is preferable that the blade **20** be provided with holes **26**, through which the bands **25** are bonded to one another as well as to the blade **20**.

As can be seen from FIGURES 1–3 and 6–9, various combinations of two or more blades can be achieved. For example, a conventional blade **35** can be used in conjunction with a blade **10** or a blade **20** or a blade **20** with a blade **10** to achieve a spacing only half of that to be achieved by the use of two double banded blades **20**. With a double banded blade **20** and a single banded blade **10**, either spacing can be achieved.

In the embodiment shown in FIGURES 10–12, two single edged blades **40** of the injector type are permanently bonded together with a plastic band **45**. This arrangement permits the injection of the double blade **40**, merely by providing an injector arm of sufficient thickness to spread the upper and lower blade clamping plates sufficiently to accommodate the compound blade. For those types of single edged blades which are not of the injector variety, a construction of blade analogous to the double edged blade shown in FIGURES 1 through 9 can be used.

Numerous variations in construction of the blades of this invention, within the scope of the appended claims will become apparent to those skilled in the art in the light of the foregoing description and accompanying drawings.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:

A razor blade adapted to provide with at least one other blade a plural cutting edge comprising a generally flat double-edged razor blade and a plastic band bonded to each of the opposite flat faces of said blade, inboard of said edges and parallel therewith, said bands being bonded to one another through holes in said blade, each of said plastic bands having a thickness between .003 and .012 inch.

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3

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