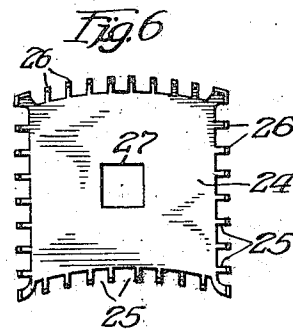
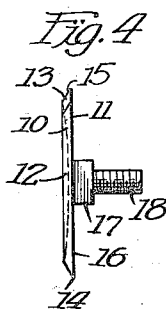
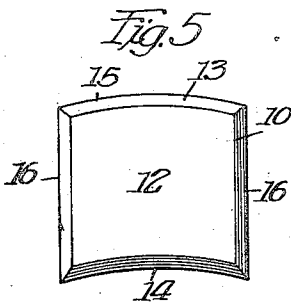
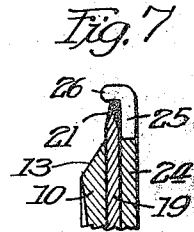
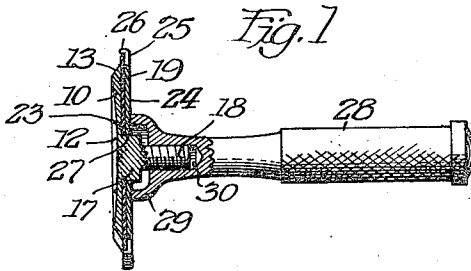
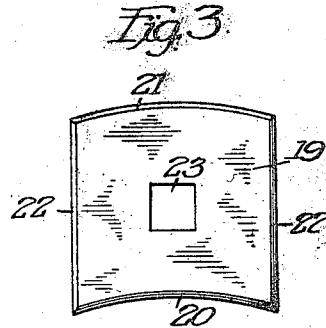
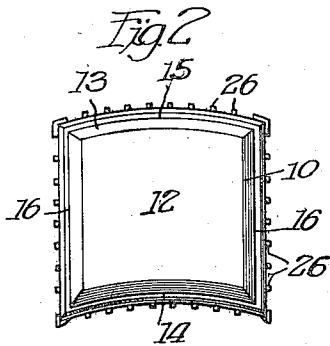


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RAZOR.

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1,324,010.



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UNITED STATES PATENT OFFICE.

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4 IN 1 SAFETY RAZOR COMPANY, OF BISMARCK, NORTH DAKOTA, A CORPORATION
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RAZOR.

1,324,010.

Specification of Letters Patent.

Patented Dec. 2, 1919.

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To all whom it may concern:

Be it known that we, CHARLES H. HYMAN and JOSEPH F. MOELLER, both citizens of the United States, and residents of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Razors, of which the following is a specification.

This invention relates to improvements in razors and has reference principally to razors of the safety type, although certain novel features of the blade are applicable to both safety and plain razors.

Among the objects sought by the invention are, to provide a razor well adapted by reason of its structural features to effect a smooth shave of the hollow and otherwise irregular portions of the face, to provide, in a safety razor, an improved guard for the cutting edge or edges of the blade, to provide, in a safety razor, an improved back-plate or clamp presenting a minimum of interference with the surface of the face during shaving, to provide, in a safety razor, a construction which may be assembled, disassembled and cleaned with a minimum of time and trouble and to provide a new and improved safety razor blade having convex, concave and straight cutting edges disposed in such relation to each other as to afford a maximum convenience to the user in shaving.

With these and other objects in view, which will hereinafter appear, our invention consists in the novel structure of blade and novel structures and combinations of cooperating parts hereinafter fully described, shown in the drawing and pointed out in the appended claims.

In its preferred embodiment our invention includes a razor blade having a plurality of cutting edges, preferably at least three, one of which is concave in the plane of the blade, another convex in the plane of the blade, and the third straight. In the accompanying drawings we have illustrated a safety razor having four cutting edges, but it will be understood that this number may be increased or decreased without involving any departure from the principle of the invention or sacrificing any of the advantages thereof.

Referring to the drawings—

Figure 1 is an elevation, partly in longitudinal section, of our improved razor.

Fig. 2 is an end view of the same as seen from the left of Fig. 1.

Fig. 3 is a detail plan view of a blade.

Fig. 4 is a detail side elevation of the back-plate and the polygonal boss and threaded stud carried thereby.

Fig. 5 is an elevational view of the part shown in Fig. 4 as viewed from the left of the latter figure.

Fig. 6 is an elevational view of the guard-plate; and

Fig. 7 is an enlarged sectional detail through edge portions of the back-plate, blade, and guard-plate.

Referring to the drawings, 10 designates, as an entirety, the back-plate which has a flat inner side 11, a slightly concave outer side 12, and a beveled edge 13 extending entirely around its outer side. It will be observed that one edge 14 of this back-plate is concave in the plane of the plate, the opposite edge 15 is convex in the plane of the plate, and the two intermediate opposite edges 16 are both straight. Centrally of the inner flat side of the plate is a polygonal boss 17, on the free end of which is a central threaded stud 18.

19 designates as an entirety the blade which is of the same general shape as the back-plate but slightly larger. This blade has a cutting edge 20 that is concave in the plane of the plate, an opposite cutting edge 21 that is convex in the plane of the plate and a pair of oppositely disposed straight cutting edges 22. The blade has a central polygonal opening 23 that just fits over the polygonal boss 17, as shown in Fig. 1, the blade resting against the flat inner side of the back-plate. The edges of the blade are beveled on both sides, as shown in Fig. 7, so that it can be applied either side up to the back-plate.

24 designates as an entirety the guard-plate which, as shown in Fig. 6, is a flat polygonal structure having the general shape of the back-plate and blade. On the edges of the guard-plate are a series of outwardly projecting spaced narrow fingers 25, each of which terminates in a laterally bent end or tip 26 (see Fig. 7) that overlies the

cutting edge of the blade. The guard-plate is formed with a central polygonal opening 27 that also fits over the polygonal boss 17 behind the blade 19. It will be observed
 5 that the finger tips 26 at the four corners of the guard-plate completely mask the four sharp corners of the blade.

28 designates the handle, the inner end of which has an enlarged cup-shaped formation 29 with a central tapped hole 30 at its
 10 base, by which the handle is screwed onto the stud 18, the cup-shaped inner end 29 serving to accommodate the polygonal boss 17 and clamp the guard-plate 24 and the
 15 blade 19 snugly against the back-plate 10. The enlarged cup-shaped inner end 29 of the handle also provides a wide bearing of the handle on the guard plate 24, thus holding the latter rigid against the blade.

20 The mode of use and advantages of the described construction will be readily apparent from the foregoing description and drawing. For shaving the hollow or concave portions of the face the convex cutting
 25 edge 15 will be found most advantageous. For shaving the rounded and more or less convex portions such as the chin and the lower sides of the jaws, the concave edge will be found most advantageous. For
 30 shaving the comparatively flat surfaces of the face the straight edges 16 will be used.

The concave formation of the outer side of the back-plate 10 is of material extent so as to be advantageous in shaving certain
 35 portions, such as the upper and under lips, since, during the shaving of these parts, the concave surface is engaged with the nose and the chin, and allows the blade to lie at a more effective angle to the surface being
 40 shaved than is possible with the well known type of safety razor having a rounded or convex back-plate, or even a back-plate with a flat outer side.

Furthermore, by bending the tips of the
 45 guard fingers over the edge of the blade, an increased factor of safety is secured, since

it is absolutely impossible for the user to cut himself with this construction, whereas it is well known that the ordinary safety razor guard does not always prevent the user from
 50 cutting himself if the tool is carelessly or hastily used at an improper angle to the face. Our improved construction of guard may make it necessary to go over the same surface two or three times, but this is com-
 55 mon practice with any razor.

We claim:

1. In a safety razor, the combination of a polygonal back-plate having a materially concave outer side, a flat inner side, and a
 60 central polygonal boss on said flat side, said boss having a threaded stud on its free end, a flat polygonal razor blade having a central opening fitted to said boss, a flat guard
 plate having a central opening fitted to said
 65 boss, and a handle having at its inner end an enlarged cup-shaped formation with a central tapped hole at its base engaged with said stud, the enlarged inner end of said
 handle surrounding said polygonal boss and
 70 bearing against the outer side of said guard plate to clamp the latter and the blade against said back-plate.

2. In a safety razor, the combination of a back-plate having a materially concave
 75 outer side and a flat inner side provided with a central polygonal boss and a threaded stud continuous with said boss, a flat razor blade having oppositely disposed substantially parallel convexly and concavely
 80 curved cutting edges, straight cutting edges extending continuously between the corresponding ends of said curved cutting edges, and a central polygonal opening fitted to said boss, a flat guard plate having a cen-
 85 tral polygonal opening fitted to said boss, and a handle having a tapped hole engaged with said stud and operating to clamp said back-plate, blade and guard plate together.

CHARLES H. HYMAN.
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