

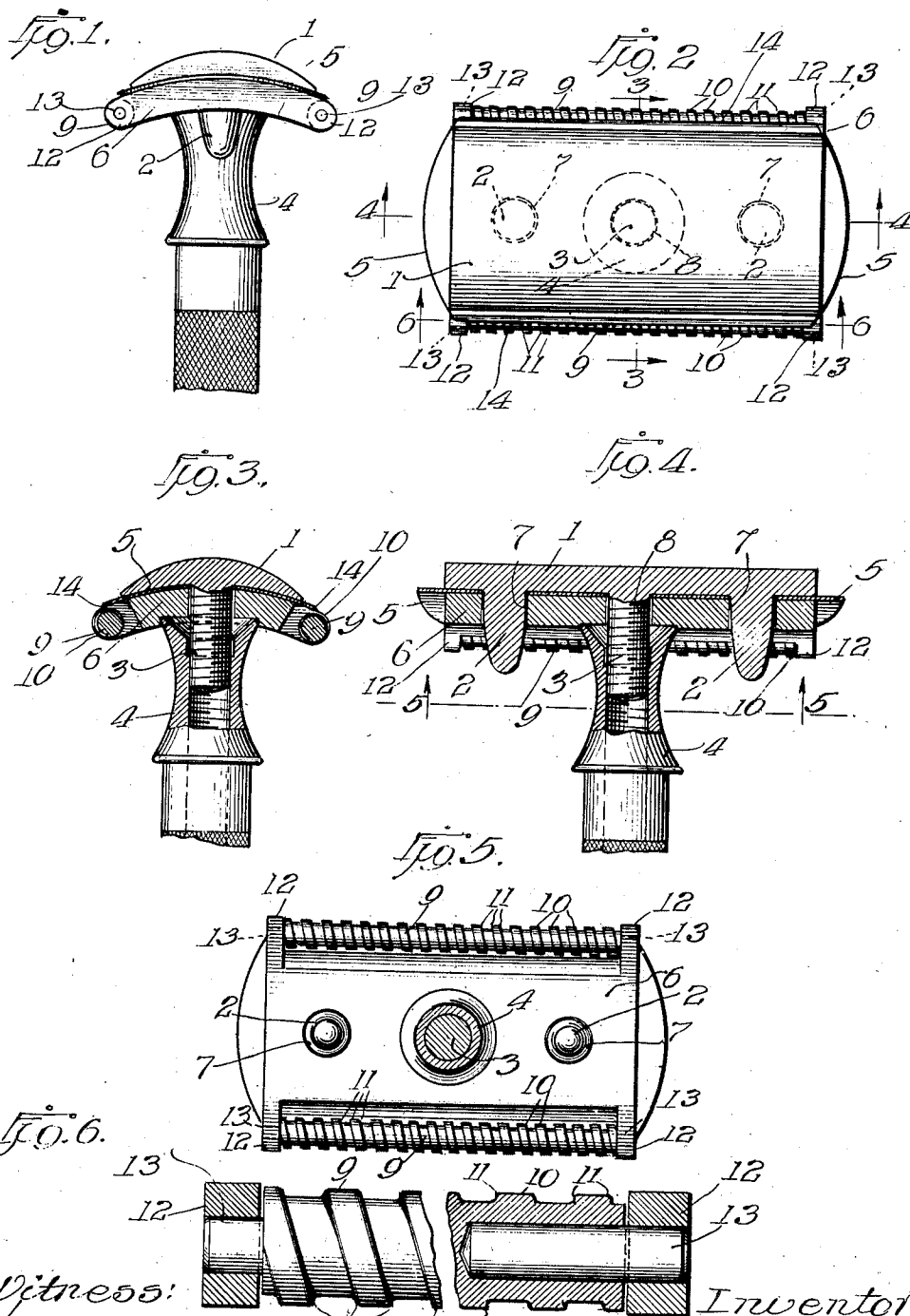
May 7, 1929.

W. F. LITTLE

1,712,086

RAZOR

Filed Aug. 8, 1927



Witness:

Harry B. White

Inventor:

William F. Little

By Edward Fay Wilson atty.

UNITED STATES PATENT OFFICE.

WILLIAM F. LITTLE, OF CHICAGO, ILLINOIS.

RAZOR.

Application filed August 8, 1927. Serial No. 211,485.

My invention relates to improvements in razors of the safety type.

The object of the invention is to provide a safety razor which shall shave cleaner, smoother and easier than heretofore; which shall provide means for not only holding the hairs against the cutting action of the blade, but will actually force or press the hairs against the edge of the blade in a manner to simulate the well known effective slanting cutting action of an ordinary razor.

In carrying out my invention I provide a guard for the blade which is movable, by the action of the razor upon the skin, in such a manner as to force the hairs transversely to the forward travel of the razor over the face.

In the embodiment of my invention shown by the accompanying drawings this movable guard is in the form of a parallel screw, with a rather flat or blunt thread, rotatably mounted adjacent to the edge of the blade. The screw serves as an effective guard taking the place of the comb-like guard commonly used, and as the razor is drawn over the face in the act of shaving the screw rotates, and not only forces the hairs against the edge of the blade but also forces them to move longitudinally of the edge of the blade resulting in the ideal cutting movement.

My invention will be more readily understood by reference to said drawings in which:—

Fig. 1, is a fragmentary, elevational view of the razor head and part of the handle;

Fig. 2, is an enlarged plan view of the razor head as seen from the bottom;

Fig. 3, is a transverse central section on the line 3—3 of Fig. 2;

Fig. 4, is a longitudinal, central section on the line 4—4 of Fig. 2;

Fig. 5, is a plan section on the line 5—5 of Fig. 4; and

Fig. 6, is a fragmentary, sectional view on the line 6—6 of Fig. 2.

In said drawings, 1 represents a head plate somewhat cylindrically shaped on its outer surface, which contacts with the face and provided with the usual centrally disposed guide pins 2 on its back. It is also provided with a central, threaded projection 3 for receiving the handle member 4 which is threaded to cooperate with same to clamp the several parts of the razor together. I preferably

make use of a very thin flexible blade 5, and the head plate is preferably concave on its inner surface for receiving this thin blade.

As so far described, the several parts are of the form and have the functions of similar parts in the commonly well known razors of this type. Instead of the usual clamping member which has fixed guard teeth and the function of which is to clamp the blade against the head by means of the screw handle, I provide a guard member 6 which takes the place of the usual guard member but which is provided at its two opposite longitudinal edges with movable guards. This guard member is provided with holes 7 for receiving the guide pins 2 and a central hole 8 for receiving the central threaded projection 3. The surface of the guard which is opposed to the head is similarly curved and the blade 5 is adapted to be flexed between these two parts when they are properly clamped together upon the blade.

The movable guards spoken of, in the form of my invention illustrated, consist of screw-like members 9, one mounted at each longitudinal edge of the guard member 6. As best shown in Figs. 5 and 6, each of these movable guards is in the form of a rather shallow, square, thread screw 10 with fairly sharp, square edges 11. However, the extreme edges are removed and the screw thread is made smooth. Each screw guard is rotatably mounted at its ends in bearing projections 12 extending out transversely at the ends of the guard member 6, the mounting being accomplished by driving bearing pins 13 into the ends of the screw guards. No hole need be bored through the guard from end to end, but the hole for a pin, 13, need be comparatively short. Assembly is thus easy for it involves merely placing a guard between the pair of projections, 12, and then passing the pin through the hole in the projection and driving the pin into the hole or socket provided in the guard, driving being necessary because, of course, a friction fit is required. Thus the pintles provided by the pins, 13, can be of substantial diameter and a good bearing is provided that results in the free rotation of the roller. No bending of the perforated lugs or projections is thus necessary in assembling the rotatable guards. This is important because the concavo-convex guard plate, 6, may be a plate of substan-

tial thickness and of a metal not having enough elasticity or spring to allow bending of the perforated lugs or projections and so brittle that the lugs would break under the pressure required to thrust the rotatable guards between the lugs. Accordingly such plate, 6, can be made by die-casting. As may best be seen by reference to Fig. 6, the rounding of the edges or corners of the thread results in the widening of the grooves outward between adjacent threads and thus provides a flaring formation which facilitates the removal of masses of lather and hair that are bound to accumulate in the grooves and the action is a self-cleaning one because of the revolution of the guards as they pass over the face since the masses of lather and hair by the revolution of the guards are brought against the cutting edge of the blade. The peripheral surfaces of the thread are flat and of substantial area, notwithstanding the rounded corners or edges, so that comfortable bearing contact against the skin is assured and the lather is pressed against or worked into the beard, giving the effect in preparing the lathered skin which is secured by the finger manipulation or rubbing for working the lather into the beard and softening the beard. This extended peripheral area of the thread does not obstruct or prevent the use of the entire cutting edge of the blade from end to end as would be the case if fixed guard fingers, as with the ordinary safety razor, were employed because by the revolution of the threaded guard, the threads are, in effect, shifted laterally of the blade edge and thus it is exposed throughout its length.

As will be noted, the bearing projections, 12, are formed at each edge of the concavo-convex guard plate, 6, by centrally notching or cutting away the same, thereby forming a pair of said bearing projections at each edge of the guard member. The guard member 6 is of uniform thickness, and each of the threaded guard members, 9, is of a diameter slightly less than the thickness of the guard member 6, so that, when centrally mounted in its notch, there are projecting ledges of the bearing projections which protect the rotatable guard members from injury during use.

As best shown in Fig. 3, the screw guards 9 are arranged close to but not in contact with the cutting edges 14 of the blade 5. In practice this clearance is attained by making the guard member 6 slightly thicker than the maximum diameter of the screw guards 9 and then when the thin razor blades are clamped tightly against the convex surface of the guard member 6, the proper clearance is provided between the edges of the blade and the guard rollers. It is also to be noted that the projections 12 in which the roller guards are mounted are the full thickness of the

guard member 6 and that the razor blade is of such a length that the ends of the cutting edges are clamped tightly against the convex surfaces of these projections. This positively prevents these blade ends or corners being inadvertently driven into the skin and makes this form of razor a true or effective safety razor. It is also to be noted that in forming the end projections 12 in which the rollers are mounted, the body of the guard is cut back to provide spaces for the rollers and ample clearance space to receive the lather as it is removed from the face. In the form shown, the outer edges 6' of the guard member 6 are slanted inwardly at a rather sharp angle. This assists in the passage of the lather through the space between the roller and the wall. The screw guards being freely rotatable, they are rotated in contact with the face as the razor is drawn along in the act of shaving and the inclination of the screw threads forces the hairs transversely of the edge of the blade as the same is advancing upon the hairs. The result is, as has been expressed, the ideal easy cutting action of the slanting or inclined razor movements, and this is attained without any possibility of cutting the skin as is sometimes done when the slanting cut is attempted with the usual safety razor.

As best shown in Fig. 3, the projections 12 are slightly higher than the guard and in clamping the blade in the holder the end portions of the blade are clamped against said projections, and consequently the clearance between the screw guard and the edge of the blade is a fixed amount and is such as has been found to be most effective in operation, being but a few thousandths of an inch. The position of the cutting edges 14 of the blade in reference to the rollers 19 is of considerable importance. These edges 14 should be positioned as shown at the minimum distance from the adjacent surfaces of the rollers. These positions might be defined as upon lines radial to the outer curved surface of the guard member 6 and extending through the centers of the roller guards. If the edges extend out beyond these lines or fall short thereof, the proper clearance between the edges and the rollers is not provided and the cutting action of the blade is not the best.

While I have illustrated my invention as embodied in a structure, including rotatable screw-like guards, my invention is not thus limited, as many modifications thereof will doubtless readily suggest themselves to one skilled in the art.

I claim:

1. A safety razor guard comprising a plate of uniform thickness and having its opposite edges centrally notched to form a pair of bearing projections at each edge, and a cylindrical, externally threaded guard member rotatably mounted centrally between each pair

of projections, the diameters of said rotatable guard members being slightly less than the thickness of said convex plate.

2. A safety razor guard comprising a plate
5 having at opposite ends integral solid projections, with alining holes and an externally threaded roller guard situated between such projections and having at its ends pintles
10 that enter the holes in the respective projections, the guard having at its end an axial hole to receive an extension of the pintle driven into such hole, pintles and guard turning together.

3. A safety razor guard comprising a plate having at opposite ends projections and a 15 roller guard mounted between and supported by such projections, said guard having on its exterior a screw thread with flat peripheral skin-engaging surfaces of substantial area, the spaces between adjacent turns of the 20 thread being outwardly flared, and the bottoms of such spaces being flat and of substantial area.

In testimony whereof, I have hereunto set my hand, this 21st day of June, 1927.

WILLIAM F. LITTLE.