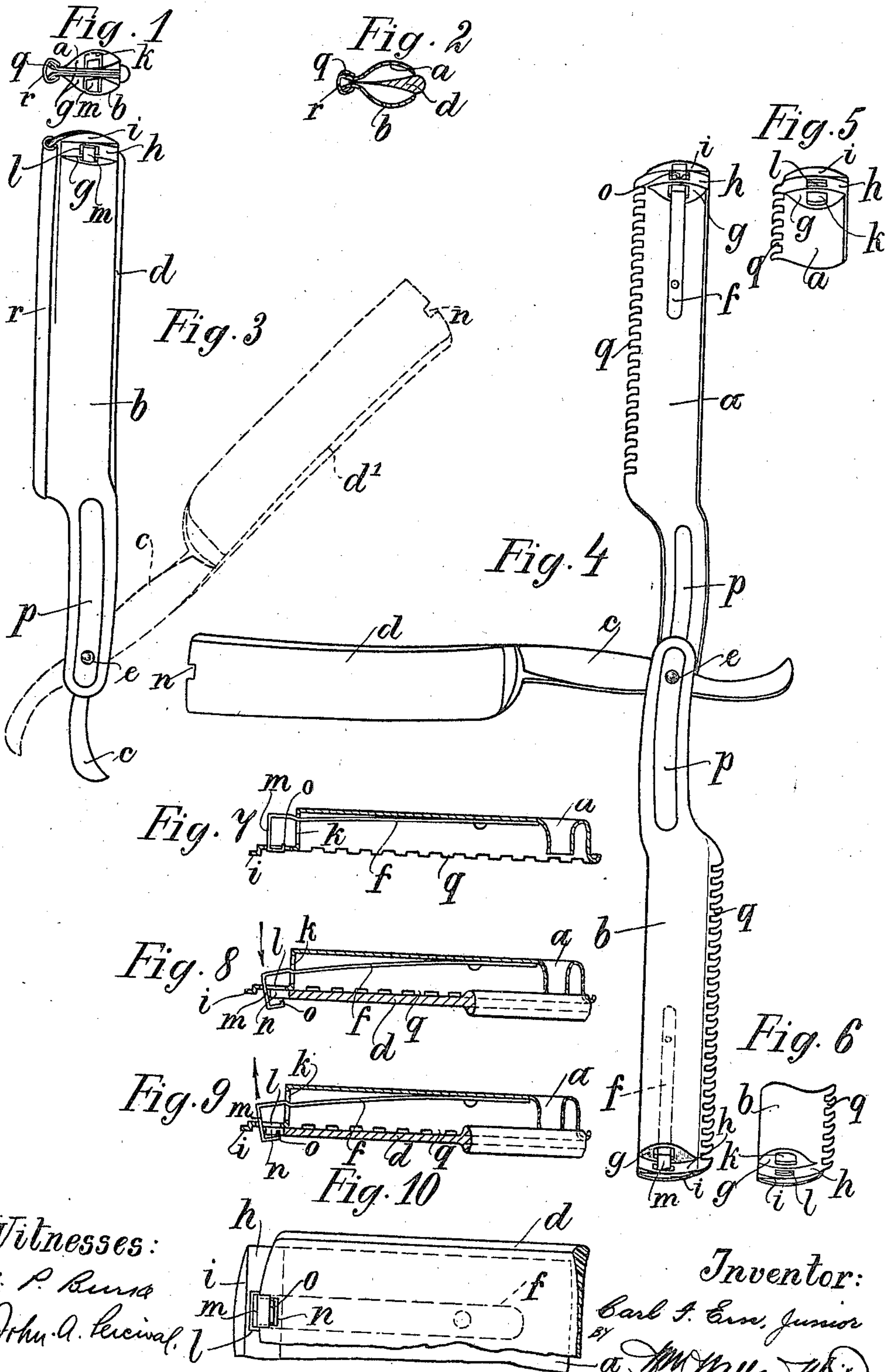


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SAFETY RAZOR.

APPLICATION FILED MAR. 31, 1910.

987,453.

Patented Mar. 21, 1911.



Witnesses:

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BY *[Signature]*



# UNITED STATES PATENT OFFICE.

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## SAFETY-RAZOR.

987,453.

Specification of Letters Patent.

Patented Mar. 21, 1911.

Application filed March 31, 1910. Serial No. 552,682.

*To all whom it may concern:*

Be it known that I, CARL FRIEDRICH ERN, Jr., a subject of the Emperor of Germany, residing at Wald, near Solingen, Rhineland, Germany, have invented certain new and useful Improvements Relating to Safety-Razors, of which the following is a specification.

The present invention relates to safety razors of that class in which on both sides of the blade protecting combs are arranged rotatably about the pivot of the razor shank which combs according to the desire of the user are brought to bear against the left or the right hand face of the blade and are used as sheaths for the blade, when the razor is not in use. The use of safety razors of this kind has up to the present met with some difficulty because there was no adequate means of fixing the projecting comb on the blade, and moreover owing to the fineness of the parts the user encountered great inconvenience in the handling thereof. According to the present invention these drawbacks are overcome by a special construction of the protecting combs whereby an extremely simple and effective locking or securing device is provided. The two pivoted combs are constructed of thin shells of sheet metal or the like and are so arranged as to constitute together a hollow sheath which when closed prevents the passage of the blade through the combs, there being a sufficient space between the back portions of the sheath parts to allow the introduction of the blade therethrough. At the top the sheath so formed is closed owing to each of the two hollow shells being provided with an inwardly directed partition which closes the cavity or channel of the shell, and adjacent or in continuation thereof and with a guide or supporting surface for the forward end of the blade. Moreover the two shells are provided with two surfaces adapted to abut one against the other, to insure the correct distance of the two shells from one another. This construction of the hollow shells renders it possible to arrange leaf springs within the cavities of the shells, such leaf springs having free play within these cavities and providing a safe means for locking or holding the blade in place, as will be clearly understood from a description of the accompanying drawing, in which:

Figures 1 to 10 illustrate, by way of ex-

ample, a safety razor according to the present invention, Fig. 1 being a top view thereof, and Fig. 2 a cross sectional view of Fig. 1; Fig. 3 represents a lateral view of the razor and sheaths closed; Fig. 4 is a view of the razor with the three parts which are rotatable about a common pivot, so turned as to be shown separately, Figs. 5 and 6 show the tops or ends of the two shells *a* and *b* without the leaf springs *f* which are arranged in their cavities, Figs. 7, 8, 9 and 10 are detail views showing the action of the blade securing spring.

From these figures it will be seen that each of the two shells *a* and *b* consists of a hollowed channeled member having an internal cavity and an external curvature, the shells being connected with the shank *c* of the razor *d* by a pivot *e* about which all these parts are rotatable. The end of each shell is closed by an inwardly directed plate or partition *g*. Extending from the inner edge of this partition is a guiding or supporting surface *h* approximately at right angles thereto and adapted to serve as a guide or supporting surface for the upper end of the razor blade, so as to enable the latter to be interposed precisely in the center between the two hollow shells. Finally each of the two shells is provided at its upper end with a guide or abutment surface *i* which may be formed by bending the part *h* which surfaces on the closing of the razor bear against one another, and are provided to maintain the correct distance of the two shells from each other, as will be clearly seen from an inspection of Figs. 1 to 3.

Formed in the two parts *g* and *h* of each of the shells are openings *k* and *l* respectively, as particularly shown in Figs. 5 to 9, these openings *k* and *l* being at right angles to one another. Located within each shell is a leaf spring *f* the end of which extends through the opening *k* where it is bent in the form of a hook *m* the end of which extends into the opening *l*. The shape of this hook *m* is clearly shown in Figs. 7 to 10 which represent this device on an enlarged scale and in different positions. As will be seen from these figures, the leaf spring *f* and its forward hook-shaped end *m* has a greater breadth than the notch or recess *n* formed in the front end or top of the razor blade *d*. The extreme end of the U-shaped hook *m* however



has a small lug *o* which is adapted to enter and engage in the recess or notch *m* in the razor blade. In order to secure the blade the hook *m* is depressed by the finger so that it is moved from the position shown in Fig. 7 into the position shown in Fig. 8 thereby projecting inwardly through the opening *l*. If now the razor blade *d* is swung around into position for use the outer end of the blade passes into the hook, as shown in Fig. 8. On now releasing the spring *f* the hook end *o* will engage in the recess or notch *n*, as shown in Figs. 9 and 10, thereby safely locking the blade in position. In order to release the blade, the spring *f* need only be again depressed into the position shown in Fig. 8. Each shell is constructed in the manner described and provided with the blade securing device so that each of them may be fixed to the blade in exactly the same manner, according to whether the user desires to shave the right or left hand side of his face, the shell not so fixed always serving as the handle. But even if the razor is completely closed up, as shown in Figs. 1 to 3 the blade securing device described at one or the other side will be used whereby the advantage is obtained that the blade is safely locked in the sheath so as to be prevented from being opened by children or unauthorized persons, or by merely applying pressure to the rear end of the shank *c* in the usual manner.

In order to protect, in the closed position of the razor, the two combs *g* against damage and to completely close the sheath formed by the two shells, a slotted tube or channel piece *r* may be used as shown in Figs. 1 to 3, which can be slipped over the combs in longitudinal direction. During the sharpening of the razor, or if the razor is to be used without the protecting combs, the sleeve *r* can remain in its position on the combs, while the blade can be turned out of the closed sheath after releasing the locking device, as indicated in dotted lines at *d'* in Fig. 3. The construction of the two halves of the sheath in the form of hollow shells moreover enables each shell at the place facing the razor shank *c* to be provided with inwardly projecting parts *p* which when viewed from the outside appear as recesses, as can be seen from Fig. 4. These parts *p* project against the sides of the shank *c* and consequently form guides or bearings for the blade between the two shells. These recesses are adapted to receive the ends of the pivot *e* so that none of the parts project to the outside of the shell as the springs *f* are also completely covered by the hollow shells without touching the blade. The shells themselves may consist of very thin sheet metal so that the weight of the whole razor is very small, while the rigidity of the blade and the pre-

cision of its adjustment in the sheath is nevertheless fully maintained, owing to the concave form of the outer shells.

What I claim and desire to secure by Letters Patent is:—

1. A safety razor comprising a blade having a notch formed in its outer end, said notch being positioned wholly intermediate the cutting edge and the back of the blade and being provided with two side walls, a comb plate rotatably secured to said blade, and means carried by said comb plate and adapted to extend within said notch and to engage said side walls to positively secure said comb plate in operative position to the blade.

2. A safety razor comprising a blade having a notch formed in its outer end, said notch being positioned wholly intermediate the cutting edge and the back of the blade and being provided with two side walls, comb plates individually rotatably mounted on either side of the blade, and means carried by said comb plates to extend within said notch and to engage said side walls to positively secure either one of the comb plates in operative position to the blade.

3. A safety razor comprising a blade having a notch formed in its outer end, said notch being positioned wholly intermediate the cutting edge and the back of the blade and being provided with two side walls, comb plates individually rotatably mounted on either side of the blade and springs carried by said comb plates to extend within said notch and engage said side walls to positively secure either one of said comb plates in operative position of the blade.

4. A safety razor comprising a blade having a notch in its outer end and positioned between the cutting edge and the back of the blade, channeled comb plates individually rotatably mounted on either side of the blade, and a hooked spring attached to the inside of each channeled plate and positioned within the channel thereof, the hooked portion of said spring extending without the channel and adapted to engage the notch in the blade for securing the plate in position for use, substantially as set forth.

5. A safety razor comprising a blade having a notch in its outer end channeled comb plates individually rotatably mounted on either side of the blade, each comb plate having an end extension adapted to engage and form a support for the outer end of the blade and springs secured to the comb plates and positioned within the channels thereof, said springs being provided with hooked ends extending without the channels and adapted to engage with the notch in the blade to secure the latter in operative position substantially as set forth.

6. A safety razor comprising a blade,



channeled comb plates individually rotatably mounted on either side of the blade, each comb plate having a perforated end extension adapted to engage and form a support for the outer end of the blade and a spring attached to the inside of each channeled plate and positioned within the channel thereof, the free ends of said spring passing through the perforated end of the comb plate and adapted to engage the blade and hold it in operative position, substantially as set forth.

7. A safety razor comprising a blade having a notch in its outer end, channeled comb plates individually rotatably mounted on either side of the blade, each comb plate having a perforated end extension adapted to engage and form a support for the outer end of the blade, and a hook ended spring attached to the inside of each channeled plate and positioned within the channel thereof, the hooked end of said spring passing through the perforated end of the comb plate and adapted to engage the blade and hold it in operative position, substantially as set forth.

8. A safety razor comprising a blade, comb plates individually rotatably mounted on either side thereof, means for securing either plate in operative position to the blade and means engaging the comb plates for securing them to one another to form a handle and to prevent relative movement of either comb with respect to the other.

9. A safety razor comprising a blade, comb plates individually rotatably mounted on either side thereof, means for securing either plate in operative position to the blade and detachable means engaging the

comb plates for securing them to one another to form a handle and to prevent relative movement of either comb with respect to the other.

10. A safety razor comprising a blade, comb plates individually rotatably mounted on either side thereof, means for securing either plate in operative position to the blade and means engaging the comb plates and embracing the comb portions of the plates for securing them to one another to form a handle.

11. A safety razor comprising a blade, comb plates individually rotatably mounted on either side thereof, means for securing either plate in operative position to the blade and a slotted tubular member engaging the comb plates and embracing the comb portions of the plates for securing them to one another to form a handle.

12. A safety razor, comprising a shanked blade, shanked comb plates rotatably mounted on either side thereof, the shanks of said plates being provided with inwardly depressed portions forming guides on the inner surface of the plates to engage the blade shank, whereby the parts will be guided in their movements relative to one another, and a pivot engaging said blade shank and the shanks of said plates, the ends of said pivot lying in the recess formed by the depressed portions of the shanks of the plates.

In testimony whereof I affix my signature in the presence of two witnesses.

CARL FRIEDRICH ERN, JUNIOR.

Witnesses:

LOUIS VANDORN,  
BESSIE F. DUNLAP.