No. 668,752.

Patented Feb. 26, 1901.

F., R. & O. KAMPFE.

SAFETY RAZOR.

(Application filed July 17, 1900.)

(No Model.)

2 Sheets—Sheet 1.

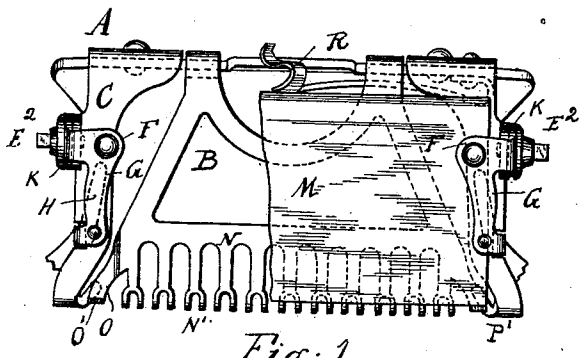


Fig. 1.

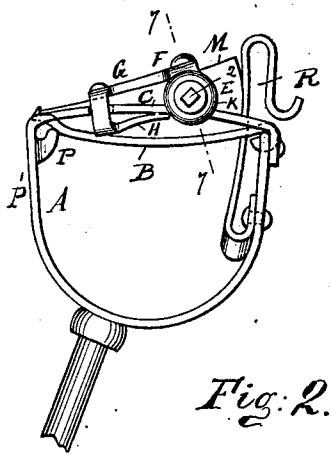


Fig. 2.

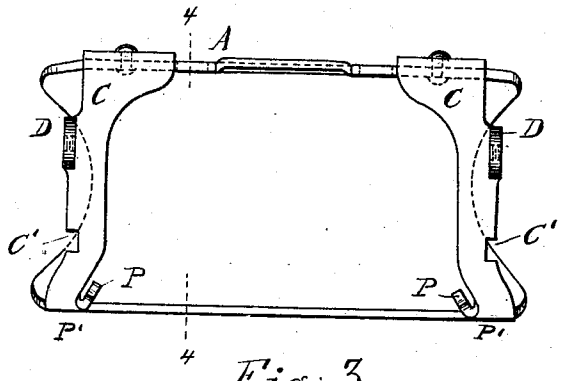


Fig. 3.

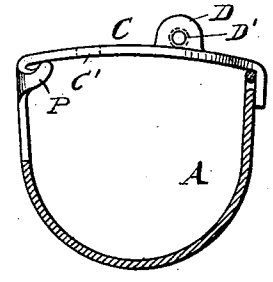


Fig. 4.

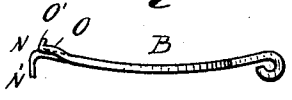


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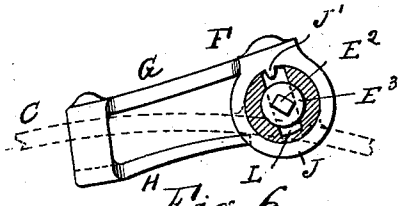


Fig. 6.

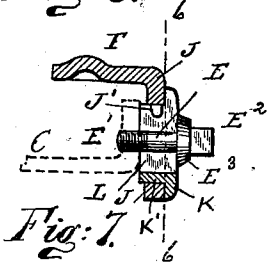


Fig. 7.

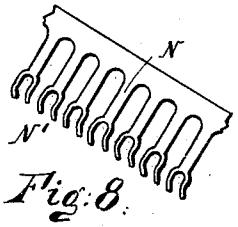


Fig. 8.

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No. 668,752. Patented Feb. 26, 1901.

F., R. & O. KAMPFE.

SAFETY RAZOR.

(Application filed July 17, 1900.)

(No Model.) 2 Sheets—Sheet 2.

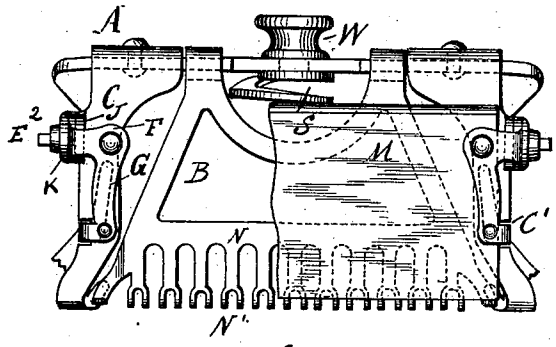


Fig. 9.

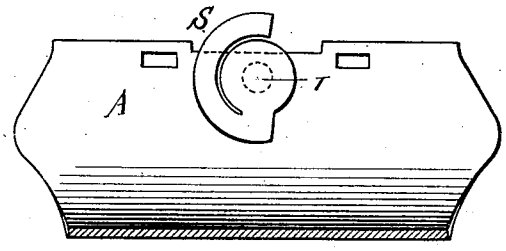


Fig. 10.

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UNITED STATES PATENT OFFICE.

FREDERICK KAMPFE, RICHARD KAMPFE, AND OTTO KAMPFE, OF BROOKLYN, NEW YORK.

SAFETY-RAZOR.

SPECIFICATION forming part of Letters Patent No. 668,752, dated February 26, 1901.

Application filed July 17, 1900. Serial No. 23,901. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK KAMPFE, RICHARD KAMPFE, and OTTO KAMPFE, citizens of the United States, and residents of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Safety-Razors, of which the following is a specification.

This invention relates to improvements in safety-razors.

One object of our invention is to provide a new and improved safety-razor-blade holder which is simple in construction, effective in use, and which greatly facilitates the adjustment of the holder for thick and thin blades and holds the blade in exact and proper adjustment to the guard, so that the cutting edge of the blade will be in the most advantageous position for shaving.

A further object of our invention is to provide a new and improved guard which permits practically all the hair to be presented to the cutting edge of the blade.

A further object of our invention is to provide a new and improved blade-pressing spring, by means of which any desired pressure can be brought to bear on the back of the blade.

In the accompanying drawings, in which like letters of reference indicate like parts in all the views, Figure 1 is a plan view of our improved safety-razor with the blade held thereon, part of the blade being broken away. Fig. 2 is an end view of the same. Fig. 3 is a plan view of the blade-holder, the guard and blade-retaining clips being removed. Fig. 4 is a vertical transverse sectional view on the line 4 4 of Fig. 3. Fig. 5 is an end view of the guard. Fig. 6 is an enlarged detailed side view of the blade-retaining clip, parts being in section on the line 6 6 of Fig. 7. Fig. 7 is an enlarged detail transverse sectional view on the line 7 7 of Fig. 2. Fig. 8 is a perspective view of the improved guard, parts being broken away. Fig. 9 is a plan view of the improved safety-razor, showing the improved retaining-spring. Fig. 10 is a longitudinal vertical sectional view through the casing looking toward the rear, the guard being removed.

The frame A of the blade-holder is made of sheet metal, U-shaped in transverse section, and to its rear edge the guard B is hinged, in the well-known manner, between the two top end cross-pieces C.

From the outer edge of each end cross-piece C a lug D extends upward a short distance to the rear of the central vertical longitudinal plane through the holder, and this lug D has a screw-threaded hole D′, into which the inner threaded end E′ of a pivot-screw E can be screwed, which pivot-screw has its outer end E^2 squared or otherwise shaped to fit a key for turning the pivot-screw axially, and adjacent to said squared head E^2 the pivot-screw is provided with a collar E^3. By means of the said pivot-screw E a blade-retaining spring-clip F is pivoted to each lug D, said clip having an arm G extending from its pivoted end lengthwise over the top of the end cross-piece C toward the front and then downward through a notch C′ in the outer edge of the end cross-piece and terminating in a spring-arm H, extending below the top end cross-piece toward the rear, the free end of the spring-arm H bearing against the under side of the end cross-piece C, and thus drawing or pressing the front end of the arm G downward toward the top of the end cross-piece C.

At its pivoted rear end the clip F has a downwardly-extending wing J, having a circular opening, from the edge of which a tooth or projection J′ extends downward at the top. A washer K rests against the outer side of the wing J and is provided with an inwardly-extending neck K′, which fits snugly in the circular opening in the wing J and is provided with a diametrical slot L, extending from the upper edge of said neck K to within a short distance from the lower edge. The slot L is wider than the tooth or projection J′, and the washer K is placed against the wing J in such a manner that the neck K′

rests in the circular opening in said wing and the tooth or projection is in the upper end of the slot L, as shown in Figs. 6 and 7.

The pivot-screw E passes through the slot L and presses the washer K against the outer side of the wing J, but permits said wing and the clip F to swing on the neck K′ of the washer as far as the play of the tooth or projection J′ between the sides of the slot L permits. The pivoted end of the retaining-clip F can be adjusted higher for thick blades and lower for thin blades by simply loosening the pivot-screw E by means of a key and moving the wing J up or down, as the slot L permits of such movement, and then drawing up the pivot-screw to lock the washer in place after adjustment.

When the blade M is inserted from the rear of the holder, the tapering or beveled upper surface of the blade, acting on the under side of the arm G, presses the same upward against the tension of the spring-arm H, causing the wing J to turn slightly on the collar K, and said spring keeps the front end of the arm G pressed upon the top of the blade.

If means were not provided for adjusting the clip for thick and thin blades, the spring-arm H would at times be strained too much and at other times not enough to hold the blade securely.

The hinged guard B is provided with the guard-teeth N and at each front corner with a short arm O, curved slightly upward and resting upon an arm P, extending diagonally upward and toward the rear from each front end piece P′ of the holder. The free end of the arm O is bent upward to form a stop or rest O′ for the cutting edge of the blade, and these stops are so located that when the cutting edge rests against them this cutting edge will be in the most advantageous position in relation to the guard-teeth for shaving perfectly. The guard-teeth N are forked at their front ends to form the two prongs N′, which are bent or curved downward L-shaped. A guard of this construction is strong and not apt to be bent, as the teeth N can be made comparatively heavy; but as each tooth N has two thin prongs N′ all the hair can pass to the cutting of the blade.

The casing or holder may be provided with the usual blade-pressing spring R, pivoted to the back of the holder.

In Figs. 9 and 10 a blade-pressing spring is shown, which consists of a flat spiral spring S, attached at its center and within the casing A to one end of a short shaft T, mounted to turn in the back of the casing A, and to the outer end of said shaft T a button W or other appliance is secured for turning said shaft T axially. The spiral spring S can thus be moved up more or less, so as to exert a greater or less pressure on the back of the blade, and as its width from front to rear increases toward its free end it can readily be adjusted to hold wide or narrow blades in the holder.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a safety-razor, the combination with a blade-holding casing, of a blade-holding clip, pivoted at the top of the casing at each end, adjustable toward and from the top of the casing at such pivoted end, substantially as set forth.

2. In a safety-razor, the combination with a blade-holding casing, of a blade-holding clip pivoted at the top of the casing at each end, adjustable at its pivoted end toward and from the top of the casing, and means for locking the pivot in place after adjustment, substantially as set forth.

3. In a safety-razor, the combination with a blade-holding casing, having a lug at each end on the top, of a pivot-screw in each lug, a washer on each screw, and a blade-holding clip mounted pivotally on each washer, substantially as set forth.

4. In a safety-razor, the combination with a blade-holding casing having a lug at each end, on the top, of a pivot-screw in each lug, a washer on each screw, a blade-holding clip mounted on each washer, said clip being provided at its inner end with a circular opening for receiving part of the washer, substantially as set forth.

5. In a safety-razor, the combination with a blade-holding casing, having a lug at each end on the top, of a pivot-screw in each lug, a collar on each screw, a washer on each pivot-screw, which washer has a diametrical slot and a neck, and a blade-holding clip mounted pivotally on each washer, the clip having a wing provided with a circular opening for receiving the neck on the washer, and a tooth or projection extending from the top of the edge of said opening into one end of the slot in the washer, the width of said tooth or projection being less than the width of the slot, substantially as set forth.

6. In a safety-razor, the combination with a blade-holding casing, having a lug at each end on the top, of a blade-holding clip mounted pivotally on each lug and means for checking the swinging motion of the clip on its pivot, substantially as set forth.

7. In a safety-razor, the combination of a blade-holding casing having an inwardly-inclined projection at each end of its front, with a guard hinged to the back of the casing, guard-teeth on said guard, an arm on the front of the guard at each end of the row of guard-teeth, to rest upon the projections of the casing substantially as herein set forth.

8. In a safety-razor a guard having guard-teeth, each forked at its outer end to form two prongs which are curved downward L-shaped, substantially as herein set forth.

9. In a safety-razor the combination with a blade-holding casing, of a spiral spring for pressing on the back edge of the blade, which spring is mounted to turn on the back of the

casing, substantially as herein shown and described.

10. In a safety-razor the combination with a blade-holding casing, of a short shaft mounted to turn in the back of the casing, a spiral spring fixed at its inner end to the inner end of said shaft and a handle on the outer end of said shaft, substantially as herein shown and described.

Signed at New York city, in the county of New York and State of New York, this 14th day of July, A. D. 1900.

FREDERICK KAMPFE.
RICHARD KAMPFE.
OTTO KAMPFE.

Witnesses:
N. M. FLANNERY,
OSCAR F. GUNZ.