No. 637,512. Patented Nov. 21, 1899.

F., R. & O. KAMPFE.

SAFETY RAZOR.

(Application filed Aug. 17, 1899.)

(No Model.)

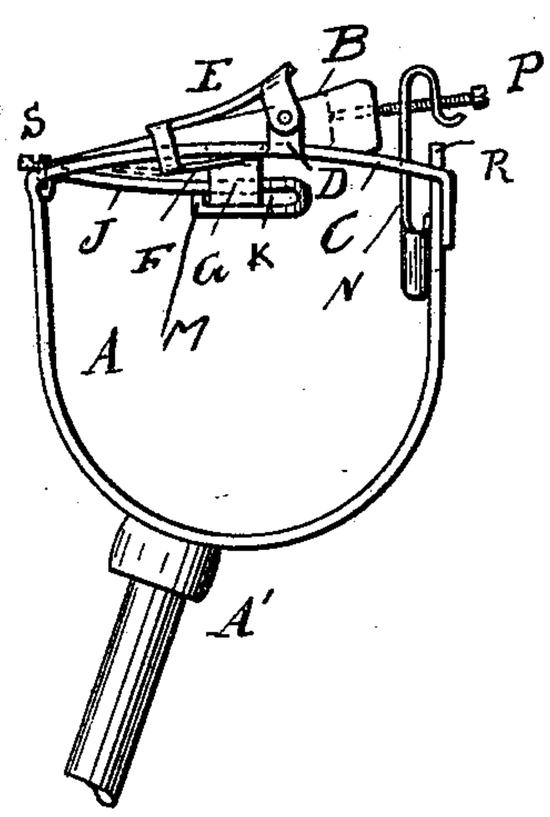

Fig: 1.

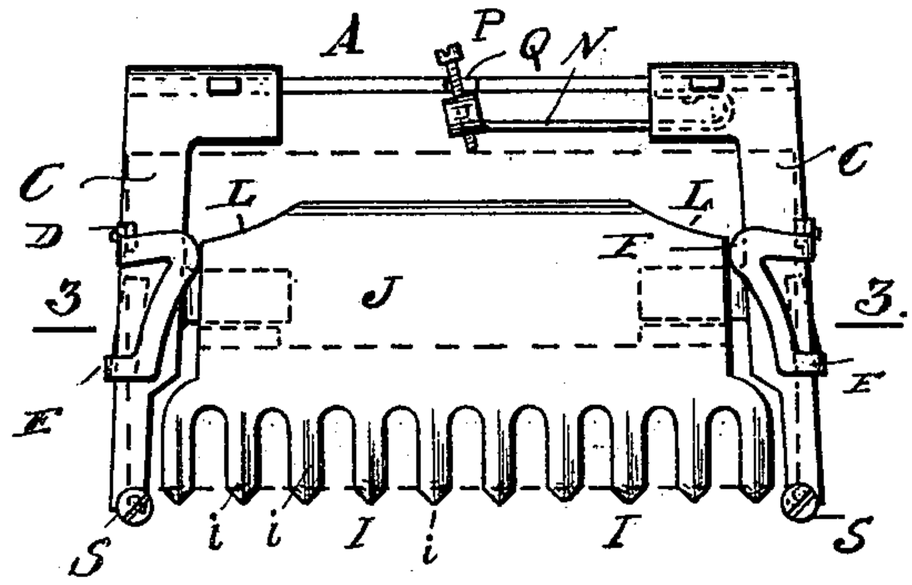

Fig: 2.

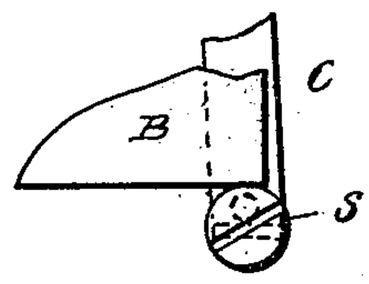

Fig: 7.

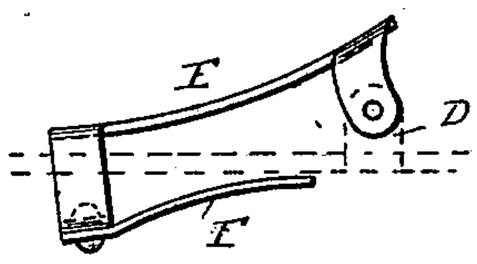

Fig: 6.

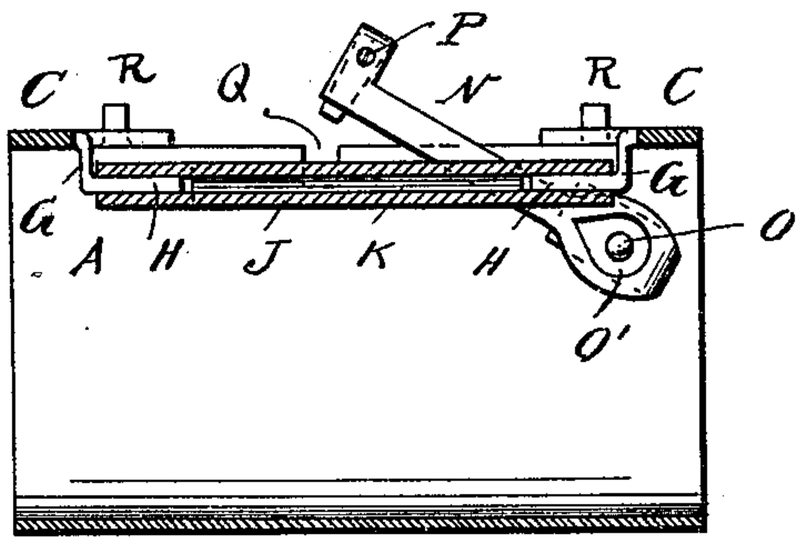

Fig: 3.

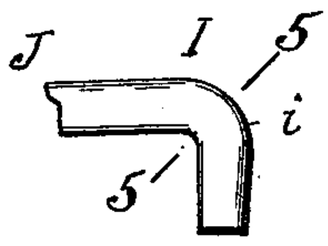

Fig: 4.

Fig: 5.

WITNESSES

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UNITED STATES PATENT OFFICE.

FREDERICK KAMPFE, RICHARD KAMPFE, AND OTTO KAMPFE, OF NEW YORK, N. Y.

SAFETY-RAZOR.

SPECIFICATION forming part of Letters Patent No. 637,512, dated November 21, 1899.

Application filed August 17, 1899. Serial No. 727,547. (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; and the object of our invention is to provide a new and improved safety-razor which is so constructed that the guard can readily be removed for cleaning the same and the blade-holding casing.

A further object of our invention is to increase the spring tension of the blade-holding spring and to adjust the same according to the width of the blade, so that said spring will hold narrow as well as wide blades; and another object of our invention is to provide new and improved spring-clips, under which the blade is held at the ends of the top of the casing.

In the accompanying drawings, forming a part of this specification and in which like letters of reference indicate like parts in all the views, Figure 1 is an end view of our improved safety-razor. Fig. 2 is a plan view of the same. Fig. 3 is a vertical longitudinal sectional view of the same on the line 3 3 of Fig. 2. Fig. 4 is an enlarged detail side view of one of the guard-teeth on an enlarged scale. Fig. 5 is a transverse sectional view of the same on the line 5 5 of Fig. 4. Fig. 6 is an enlarged detail view of the spring-holding clip. Fig. 7 is an enlarged detail plan view of one of the eccentric stop-screws.

The blade-holder A is made U-shaped or of any other similar or suitable shape and is provided with a suitable handle A'. A convexly-curved cross-piece C is formed on the top of the holder at each end, and from the outer edge thereof a short standard or lug D extends upward, and to the same a clip E is pivoted in such a manner that it can swing up and down slightly, which clip is bent to extend around the outer edge of the cross-piece C and terminates in a spring-arm F, the free end of which rests against the under side of the cross-piece. The said clip is made of spring metal or of ordinary brass, and the arm F is in that case made of spring metal.

The blade B rests upon the end cross-pieces C and is pressed by the retaining-spring N toward the front of the holder, and the top of blade is pressed against the swinging end part of the clip E, which is thus pressed upward against the resiliency of the spring-arm F, which is brought into greater tension and causes the clip E to hold down the blade on the cross-pieces C. The clips E thus adapt themselves automatically to the different thicknesses of different blades.

From the inner edge of each end cross-piece C an arm G extends downward, and from the lower end of each arm G a wing H projects, which wings extend toward each other.

The guard J, having the usual teeth I at its front edge, is doubled over on the under side at its rear edge to form a pocket K, and the corners of said doubled-over rear part of the guard are cut off at an angle to form the slots L, through which the wings H can pass into the pocket when the guard-plate is moved from front to rear of the holder and whereby the guard is held on the holder.

To prevent pushing the guard too far to the rear, upwardly-extending stop-lugs M are formed on the lower part of the doubled-over rear part of the guard, against which stop-lugs the front edges of the wings H strike when the guard has been pushed back the requisite distance to bring its teeth I into proper position in relation to the edge of the blade B.

The guard-teeth I are triangular in cross-section, as shown in Fig. 5, whereby a sharp ridge *i* is formed along the top and front of each tooth, which ridges guide the fine hairs to the cutting edge of the blade and make the entire cutting edge available for cutting.

The spring N is pivoted at its lower end part to the rear wall of the holder A and bears with its upper end part against the rear edge of the blade B. For the purpose of increasing the elasticity and tension of this holding-spring N its lower end is bent U-shaped, and the shorter arm of this bent end is pivoted by the pivot O to the rear wall of the holder. To permit of inserting

this pivot O, the longer arm of the spring is provided with an opening O'. A screw P is screwed through the upper end of the spring N, which upper end is preferably bent or doubled over, and the inner end of said screw is adapted to bear against the rear edge of the blade B. By adjusting said screw P to project a greater or less distance toward the guard-teeth from the spring N said spring is adapted for holding blades of different widths, as, for example, is shown in Fig. 1 in full and dotted lines.

The rear wall of the holder A is provided in its upper edge with a notch Q, into which the screw P can pass when the spring N is pressed down to permit of removing the blade.

So as to prevent the blade from accidentally sliding off the holder toward the rear when the spring N is pressed down the lugs R are provided, which project from the top edge of the rear wall of the holder and are made integral therewith. In order to remove the blade, its rear edge must first be lifted over these lugs after the spring N has been pressed down.

A stop-screw S is screwed into the top of each cross-piece C at the front end, which screws have their heads fixed eccentrically on the body, so that by turning the screws the periphery of the head is moved outward or inward and forms a stop for the cutting edge of the blade a greater or less distance from the extreme front edge of the holder.

For the purpose of cleaning the guard and the interior of the blade-holder it is only necessary to seize the outer edge part of the guard and pull it outward, and with equal facility it can be replaced. Wide or narrow blades can be held on the holder and only require an adjustment of the screw P.

If desired, the spring-arm F may be extended to the front, as shown in Fig. 1 in dotted lines, without in any way altering the action or utility of the same.

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, having inwardly-extending wings, of a detachable guard doubled over at its rear edge to form a pocket and having its rear corners cut off at an angle to form slots leading to such pocket, substantially as herein shown and described.

2. In a safety-razor the combination with a blade-holding casing, having inwardly-extending wings, of a detachable guard doubled over at its rear edge to form a pocket and having its rear corners cut off at an angle to form slots leading to such pocket and parts of the doubled-over portion being bent to form stops, substantially as herein shown and described.

3. In a safety-razor the combination with a blade-holding casing of a guard and a stop-screw on the upper surface of the casing at each front corner, said screws having their heads eccentric to the body of the screw, substantially as herein shown and described.

4. In a safety-razor the combination with a blade-holding casing, of a blade-holding spring-clip pivoted at the top of the casing at each end and pressed by its spring tension against the under side of the casing, substantially as herein shown and described.

5. In a safety-razor the combination with a blade-holding casing, of a lug on the same at each end and a blade-holding spring-clip pivoted to each lug, substantially as herein shown and described.

6. In a safety-razor the combination with a blade-holding casing, of a clip pivoted to the top of the same at each end, which clip embraces the end edge of said top, and a spring-arm on said clip and bearing against the under side of said top, substantially as herein shown and described.

7. In a safety-razor the combination with a blade-holding casing, of a blade-retaining spring having its lower end bent U-shaped and having its shorter arm pivoted to the rear wall of the casing and provided in its longer arm with an opening through which the pivot can be passed, substantially as herein shown and described.

8. In a safety-razor the combination with a blade-holding casing, of a pivoted blade-retaining spring, and a screw in the free end of said spring, the casing having a notch into which said screw can pass, substantially as herein shown and described.

Signed at New York city, in the county of New York and State of New York, this 9th day of February, A. D. 1899.

FREDERICK KAMPFE.
RICHARD KAMPFE.
OTTO KAMPFE.

Witnesses:
H. ADOLPH WINKOPP,
M. SMILLIE.