(No Model.)

F., R. & O. KAMPFE.

SAFETY RAZOR.

No. 385,462. Patented July 3, 1888.

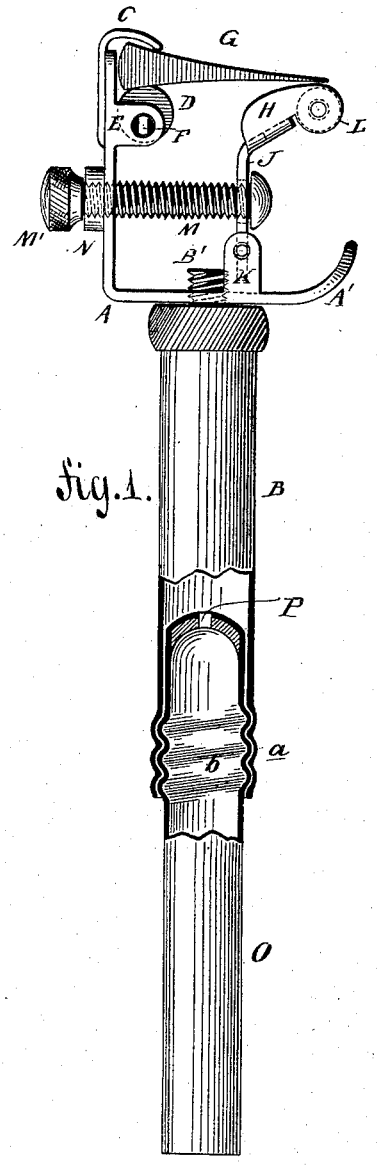

Fig. 1.

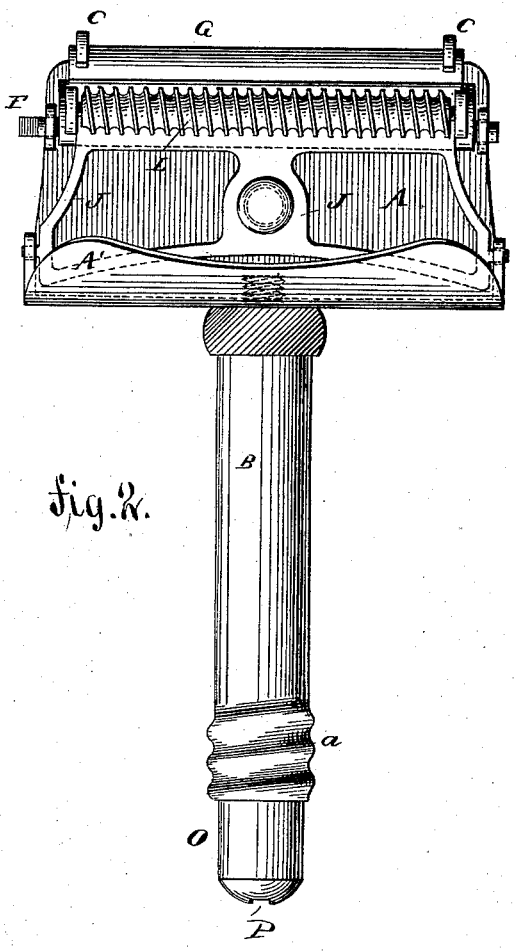

Fig. 2.

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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. 385,462, dated July 3, 1888.

Application filed March 12, 1886. Serial No. 194,940. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK KAMPFE, RICHARD KAMPFE, and OTTO KAMPFE, of Brooklyn, Kings county, 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 that class of razors known as "safety-razors," in which a small blade is held in a suitable frame and provided with a guard to prevent the edge of the razor from cutting into the skin.

The invention consists in the combination, with a suitable frame, of an eccentric for holding the blade in the same, and a spirally-grooved roller or worm mounted below the cutting-edge of the blade in a swinging frame provided with suitable means for adjusting it, all as will be described hereinafter, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side view of our improved safety-razor, parts being broken out and others in section. Fig. 2 is a face view of the same.

Similar letters of reference indicate corresponding parts.

The casing or frame A of the razor is made of sheet metal and has approximately the cross-section of a letter L. In the bottom it is provided with an aperture for receiving the screw B′ on the upper end of the handle B, which will be described later. The front edge of the casing or frame is bent over, as shown in Fig. 1, to catch the lather. At the upper edge of the rear wall of the casing or frame hooks C are formed, one at each end, which project slightly downward and toward the front. Below said hooks a roller, D, is journaled eccentrically in lugs E, formed at the end edges of the rear wall of the casing and projecting toward the front, said roller being provided at one end with a square pivot, F, which fits a key, by means of which the roller can be turned. The blade G is tapered toward the front edge, and the rear thicker edge is placed on the eccentric-roller D, which is then turned on its longitudinal axis, whereby the blade is pressed firmly between the said roller and the hooks C, and is thus held in place. The end parts of the front or cutting edge of the blade G rest upon the curved upper edges of wings H, formed on the upper end of the end pieces of a frame, J, pivoted in end lugs, K, projecting from the upper surface of the bottom of the casing, thus permitting said frame J to swing toward or from the back of the frame A.

In the upper ends of the wings H a worm, L, or roller provided with a spiral groove is pivoted to revolve on its longitudinal axis, said roller being directly below the cutting-edge of the blade G.

A screw, M, provided with a milled or like head, M′, is passed through a nut, N, in the rear wall of the frame or casing A, and has its front end mounted to turn in the frame J. A head or button is formed on the end of the screw-head to prevent the same being removed from the frame J. By turning the screw M the swinging frame J is swung toward the front or rear, and thus the roller L is caused to project a greater or less distance beyond the cutting-edge of the blade, according to the desired distance that the blade is to remain from the skin.

The blade cannot cut into the skin, as the worm acts as a guard and runs over the skin directly in front of the blade. The special advantage of the worm or spirally-grooved roller is that all parts of the cutting-edge can act. The spiral rib or ridge forming the worm continually moves and does not remain fixed in front of any part of the edge, whereas in the razors heretofore provided with annular ribs or fixed guards only those parts of the blades cut that are between the ribs or guards, and it is this we desire to obviate.

The handle is provided at one end with a screw, B′, as stated, and at the other end with an internal screw-thread, *a*, for receiving a screw-thread, *b*, formed on the end of a handle-extension, O, provided at its closed end with an aperture, P, for receiving the square pivot F of the eccentric-roller D, so that the handle can be used as a key for turning the roller. When a long handle is required, the handle-extension is screwed into the handle B in the manner shown in Fig. 1, and when a short handle is required the parts are reversed,

the open end of the extension O being passed into the hollow handle B and the two screwed together, as shown in Fig. 2. The handle can thus be removed from the frame or casing of the razor and all the parts packed in a small space.

The blade is magnetized, as we find the cutting-edge is preserved on a magnetized better than on a non-magnetized blade. The roller D serves as an armature for the magnetized blade.

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

1. In a razor, the combination, with the frame or casing on which the blade can be held, of a swinging frame pivoted in the frame on which the blade is held, a spirally-grooved roller or worm mounted to turn in the swinging frame, and a screw connected with the swinging frame for the purpose of adjusting it, substantially as shown and described.

2. In a razor, the combination of the frame A, having the lugs K of the frame J pivoted in said lugs, the spirally-grooved roller or worm L, mounted to turn on the swinging end of the frame J, and the screw N, passed through the frames A and J for the purpose of adjusting the frame J, substantially as shown and described.

3. The combination, with the frame A, of the pivoted frame J, having the wings H, provided with upper rounded edges, the spirally-grooved roller or worm L, mounted to turn on its longitudinal axis in the wings H, and of mechanism for adjusting the frame J, substantially as shown and described.

4. In a razor, the combination, with a frame having hooks, of an eccentrically-mounted clamping-roller below the casing for the purpose of pressing the blade against said hooks and thus holding it in place, substantially as shown and described.

5. In a razor, the combination, with a frame having lugs E and hooks C, of a roller, D, mounted eccentrically in said lugs and provided with a square pivot, F, substantially as shown and described.

In testimony that we claim the foregoing as our invention we have signed our names in presence of two subscribing witnesses.

FREDERICK KAMPFE.
RICHARD KAMPFE.
OTTO KAMPFE.

Witnesses:
WILBUR RANKIN,
ALAN D. KENYON.