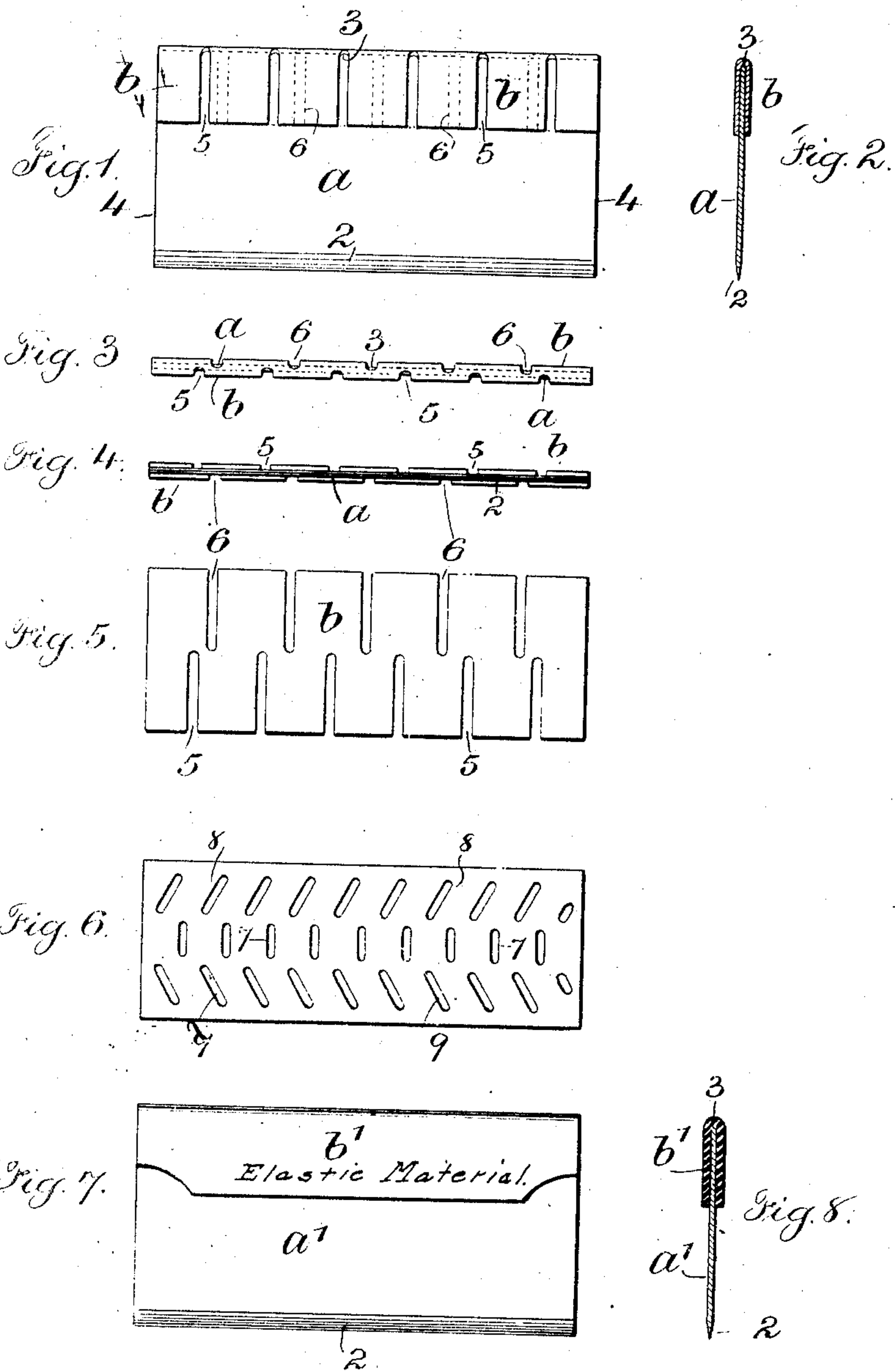


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SAFETY RAZOR BLADE.  
APPLICATION FILED JAN. 10, 1910.

985,419.

Patented Feb. 28, 1911.



Witnesses

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# UNITED STATES PATENT OFFICE.

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## SAFETY-RAZOR BLADE.

985,419.

Specification of Letters Patent. Patented Feb. 28, 1911.

Application filed January 10, 1910. Serial No. 537,176.

*To all whom it may concern:*

Be it known that I, OTTO KAMPFE, a citizen of the United States, residing in the borough of Brooklyn, in the county of Kings, city and State of New York, have invented an Improvement in Safety-Razor Blades, of which the following is a specification.

Safety razors are commonly provided with blades of thin flexible steel in sets of a dozen more or less. Many of these blades are normally flat and are securely held in a suitable holder for use in said flat condition. Other of these blades while normally flat are secured in the holder for use in which the blade is transversely bent or flexed but with a straight cutting edge. Other of these normally flat blades have also been employed in a holder in which the blade is held transversely flat but longitudinally bent or flexed so as to present a curved cutting edge to the face, which is believed to be more advantageous for use than a straight edge.

My invention relates to a flexible safety razor blade normally flat, strengthened along one edge, adapted to be held in its normally flat condition for stropping or honing and yet adapted to be longitudinally bent and flexed so as to present a curved cutting edge to the face in shaving.

In carrying out my invention I provide a thin normally flat sheet steel blade sharpened along one of its longer edges and I secure thereto along the opposite edge and in any suitable or desired manner, a frame of suitable material of flattened U-form in cross section, preferably of skeleton or open-work form. This frame is preferably made of spring steel,—it stiffens the blade, provides for readily holding the blade for honing or stropping and yet is adapted to yield longitudinally when desired so as to flex and bend the blade in a suitable holder provided therefor to present a curved cutting edge to the face in shaving. The blade of my invention, furthermore, returns when released from the holder to a normally flat condition.

In the drawing, Figure 1 is an elevation, Fig. 2 a vertical cross section, Fig. 3 a top edge view as per Fig. 1, Fig. 4 a bottom edge view as per Fig. 1, and Fig. 5 a plan of the frame as laid out flat, or before the same is bent up into flattened U-shape; said figures

relating to a form of my invention. Fig. 6 is a plan of a frame of modified form as laid out flat. Fig. 7 is an elevation and Fig. 8 a central cross section of still another form of my invention.

In Figs. 1 to 5 inclusive, *a* represents the blade in which 2 is the sharpened edge and 3 the opposite unsharpened edge. These are the longer edges of the blade; 4 representing the respective ends. *b* represents a frame of flattened U-form or shape in cross section. Fig. 5 shows the form of this frame before it is bent up into flattened U-shape. This frame is provided with a series of notches extending in from one edge and a series of notches extending in from the opposite edge, which notches are staggered; that is, so as not to bring the notches in line, and it will be noticed that these series of notches extend from the opposite edges up to the central line of the frame. Therefore when the frame is bent from the flat form in which it is stamped out into the flattened U-form to receive the blade and be firmly clamped to or otherwise fastened to the blade, there are produced between the inner ends of the said notches narrow intervening portions of the sheet steel which assist somewhat in the bending action. Fig. 3 quite plainly illustrates this condition.

The blade of my improvement is adapted for use in the holder shown in my application for Letters Patent filed December 9, 1909, Serial #533,998, and the same might be used in the holder shown in my application filed July 20, 1907, Serial #384,798, and might be adapted for use in a frame of different construction so long as the said frame is made with a curved guard comb and devices at the opposite edges for grasping the blade because with the blade of my present invention the same is longitudinally bent or flexed as inserted in the holder so that when in the holder the cutting edge is curved toward the face in shaving.

In Fig. 6 I have shown a modified form of frame in which there is produced a central series of apertures 7 in the blade which in length run transversely of the blade and in series through the center longitudinally of the blade, and in a staggered relation to this central series there are series of apertures 8 and 9 between the same and the opposite edges of the blade, so that when the blade is bent into flattened U-form the cen-



tral portion is bent at about the center of the openings 7 between which there are preferably narrow thicknesses of the sheet steel to slightly yield in longitudinally bending the blade and the series 8 and 9 assist very materially in the bending of the opposite flat faces of the U-form.

In the modification shown in Figs. 7 and 8, the blade  $a^1$  is represented as associated with a frame  $b^1$  of flat U-form which frame however is formed of an elastic material such as hard rubber or celluloid and this may be secured to the frame in any desired or suitable manner. This like the other frames is secured to a blade in a normally flat condition and because of its inherent resiliency is adapted to bend with the blade longitudinally so as to flex the blade for use in a suitable holder and in use present the sharpened edge 2 in a curved form to the face for shaving.

In view of the normally flat condition of the thin flexible blades of my invention, they are preëminently adapted for grinding, honing or stropping so as to maintain a sharpened edge for use.

I claim as my invention:

1. As a new article of manufacture, a thin flexible steel blade for a safety razor, sharpened along one longitudinal edge and provided with a yieldable reinforcing frame along its opposite unsharpened edge of U-form flattened in cross section and adapted to bend when the blade is flexed for use from a flat to a curved form.

2. As a new article of manufacture, a thin flexible blade of steel for a safety razor, comprising a rectangular form of steel sharpened along one longitudinal edge and unsharpened along the opposite edge and a flattened yieldable reinforcing U-frame re-

ceiving and secured to the unsharpened edge and adapted to bend into a concavo-convex form with the thin razor blade when the same is flexed, so as to present a curved cutting edge to the face in shaving.

3. As a new article of manufacture, a thin flexible blade of steel for a safety razor, comprising a rectangular form of steel sharpened along one longitudinal edge and unsharpened along the opposite edge, and a flattened U-frame receiving and secured to the unsharpened edge and said frame provided with series of apertures suitably arranged at different places in the frame, which while they maintain the integrity of the frame yet permit the frame to bend longitudinally with the blade into concavo-convex shape so as to present a curved cutting edge to the face in shaving.

4. As a new article of manufacture, a thin normally flat steel blade for a safety razor, sharpened along one of its longest edges and a yieldable reinforcing frame secured to the said blade along the edge opposite to the sharpened edge and normally flat, and both blade and frame adapted to bend or flex for use when inserted in a suitable holder.

5. As a new article of manufacture, a thin normally flat steel blade for a safety razor, sharpened along one of its longest edges and an open-work frame of spring sheet metal also normally flat and secured to the said blade along the edge opposite to the sharpened edge and both blade and frame adapted to bend or flex when inserted in a suitable holder.

Signed by me this 3d day of January 1910.  
OTTO KAMPFE.

Witnesses:

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E. ZACHARIASEN.