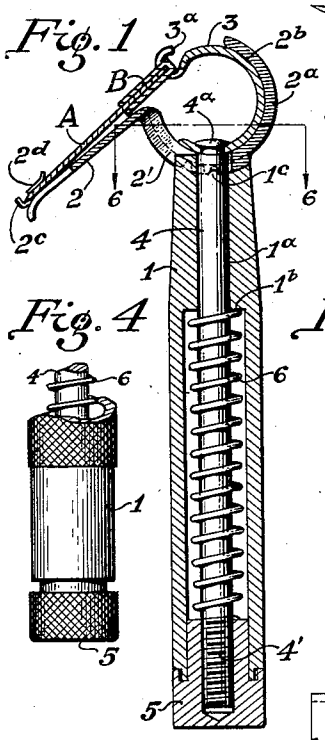
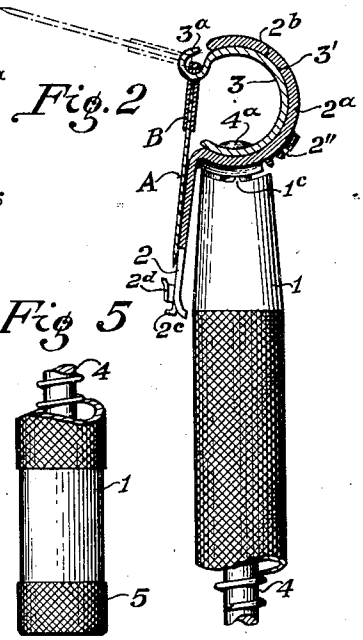
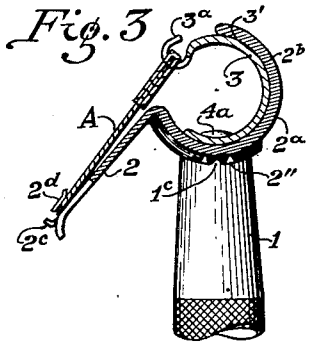
March 10, 1931. H. J. GAISMAN 1,796,260

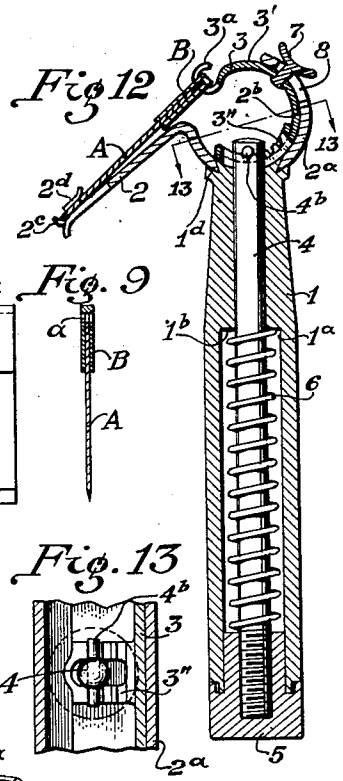
SAFETY RAZOR

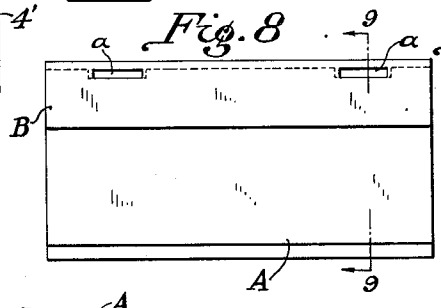
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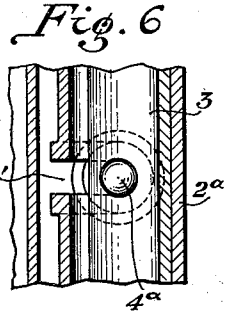


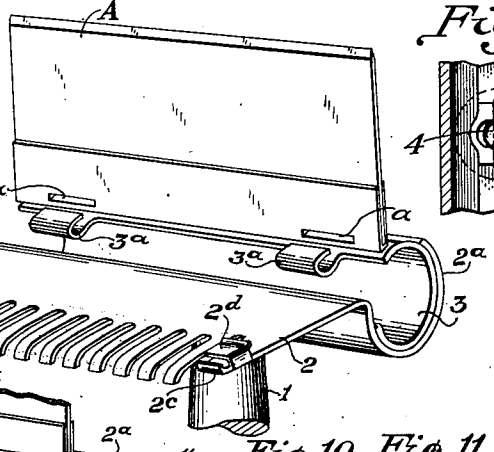


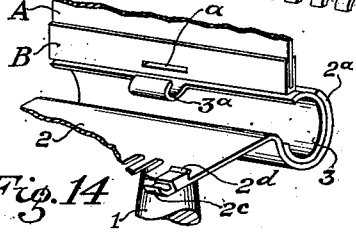


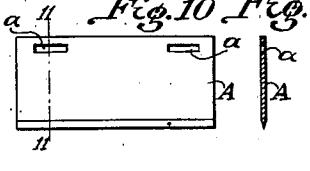












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Patented Mar. 10, 1931

1,796,260

UNITED STATES PATENT OFFICE

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SAFETY RAZOR

Application filed July 9, 1927. Serial No. 204,438.

One of the objects of my invention is to provide a safety razor blade in which the blade may be readily attached to and removed from a blade holder and in which the blade will be free to move into various positions relative to the holder and to a guard.

Another object is to provide a blade holder and a guard movable relatively one to another, whereby the guard and the blade may be moved into and retained in different shaving positions and the blade and the guard may be moved into compact relationship to the handle of the razor for storage purposes.

My invention comprises a safety razor including a blade holder provided with retaining means for a blade and a blade having means complemental to the first named retaining means for engagement therewith, whereby the blade may be detachably connected with the blade holder and may be turned or swung into various positions for cooperation with a guard that is provided with means to retain the blade in shaving relation thereto.

My invention further comprises a support, a guard carried thereby, a blade holder carried by the support, the guard and the blade holder being mounted for relative rotative movement so that the blade may be adjusted with respect to the guard for shaving and may be released from the guard, and means to retain the blade holder and the guard in different set positions with the blade in operative relation to the guard.

My invention also comprises novel details of improvement that will be more fully hereinafter set forth and then pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part hereof, wherein

Fig. 1 is a vertical section of a safety razor embodying my invention, showing the blade and the guard in shaving relation;

Fig. 2 is a similar section showing the blade and the guard out of shaving relation;

Fig. 3 is a sectional detail illustrating the blade and guard in a different position from Fig. 1;

Figs. 4 and 5 are details of part of the support or handle of the razor;

Fig. 6 is a detail section on line 6, 6, in Fig. 1;

Fig. 7 is a perspective view;

Fig. 8 is a detail of a blade;

Fig. 9 is a section on line 9, 9, in Fig. 8;

Fig. 10 illustrates a modified form of blade;

Fig. 11 is a section on line 11, 11, in Fig. 10;

Fig. 12 is a central section of a modification;

Fig. 13 is a detail section on line 13, 13, in Fig. 12, and

Fig. 14 is a perspective view same as Fig. 7 modified.

Similar numerals of reference indicate corresponding parts in the several views.

A support is indicated at 1 shown in the form of a handle having a guard 2 and a blade holder 3 for the blade A. The guard is shown provided with a head 2*a* carried by the support 1 and provided with an interior annularly disposed guiding face 2*b* within which the blade holder 3 is located, said blade holder being substantially in curved form, the exterior curved surface 3′ of the blade holder being located against the curved surface 2*b*, whereby the blade holder and the guard head 2*a* may be axially rotated relatively one to the other. In the example illustrated in Figs. 1, 2, 3 and 7 the blade holder 3 is retained from movement respecting the support or handle 1 by means of a rod 4 that extends through the bore 1*a* of support 1, and at the upper end said rod is secured to the holder 3, as by riveting at 4*a*, and the head 2*a* of the guard is rotatively guided by and around the holder 3, for which purpose said head is provided with an opening or slot at 2′ which receives the adjacent end portion of rod 4 so that the head 2*a* may be adjusted with the guard relatively to support or handle 1. Means are provided to retain the parts in adjusted positions, for which purpose I have shown a nut 5 operative on the screw threaded end 4′ of rod 4 and adapted to engage the adjacent end of support or handle 1, whereby when the nut is set tight against the support the rod 4 will draw the blade holder 3 tightly against the head 2*a*. By preference a spring 6 is located in the en-

larged portion of bore 1*a* and bears at one end against nut 5 and at the opposite end against a stop shoulder 1*b* of support 1, the spring tending normally to draw the parts 2*a* and 3 into engagement, and the nut 5 secures the parts in set position, (Fig. 1). When the nut 5 is unscrewed for a suitable distance from support 1, (Fig. 4) the pressure of the latter against head 2*a* will be relieved so that the support with its projection may be adjusted along the rod 4 and the head may be rotated relatively to the blade holder 3 on a substantially common axis therewith.

The blade A is adapted to be detachably connected with the blade holder 3, for which purpose I have shown the blade holder provided with blade retainers 3*a*, shown in hook-like form and spaced apart, extending from the outer edge of the blade holder, and the blade is provided with spaced slots or openings *a* complemental to the detainers 3*a* adapted to be readily connected to and disconnected from said retainers by suitably locating the blade relative to the retainers, as indicated in Figs. 7 and 14, and then passing the retainers through the slots *a* to hang the blade on the retainers. In the example illustrated in Figs. 1, 2, 3, 8, 9, 12 and 14 the rear edge of the blade opposite its cutting edge is provided with a backing B, which may be in the form of a folded piece of metal secured along the blade in any well known way, the slots *a* being formed through the blade and through the backing in register. In the example illustrated in Figs. 10 and 11 the backing B is omitted and the slots *a* in the blade are utilized solely for connection with the retainers 3*a*. When the blade is in shaving relation to the guard the retainers oppose the metal at the sides of the slots *a* of the blade to resist the thrust of stops 2*c* against the blade edge, said stops being shown near the corners of guard 2. The guard 2 is also shown provided adjacent to the stops 2*c* with lugs 2*d* which overlie the adjacent portions of the blade to retain the latter in shaving relation to the guard and permit sliding adjustment of the cutting edge of the blade relative to the guard while the blade is retained thereon.

By means of the construction described the blade edge may be adjusted against the stops 2*c* by suitably rotating the guard head 2 and securing the parts together by means of the rod 4 for a relatively close shave, or the blade edge may be adjusted rearwardly respecting the guard for a relatively coarse shave, as indicated in Fig. 3.

Means are provided to retain the guard in different positions respecting the blade according to the degree of rotation of the blade holder and head 2*a* relatively to one another. For such purpose I have shown the support or handle 1 provided with a projection 1*c* adapted to engage one of several notches 2″ in the guard head 2*a* to keep the latter from rotation when the parts are assembled for shaving. When the guard and blade edge are adjusted for shaving, as in Fig. 1, (as for a close shave), the projection 1*c* will enter one of the notches 2″ to retain the blade and guard in shaving relation, and when the latter are in a different position the projection 1*c* will enter a different notch 2″, as indicated in Fig. 3, as for a coarse shave. The nut 5 may be suitably unscrewed when it is desired to adjust the projection 1*c* relatively to either of the notches 2″, and then the nut be screwed on the support 1 for retaining the parts in set position.

A further advantage of my improvements is that the guard may be moved to a position extending along and relatively close to the support 1 with the blade extending flatwise against the guard, as indicated in Fig. 2. The parts may be adjusted to the last named position by suitably unscrewing the nut 5, rotating the blade holder and its head 2*a*, rotating the blade against the guard, and screwing back the nut to secure the parts together. The construction described affords a means for compactly locating the parts, as in Fig. 2, when the razor is not to be used for shaving, as for storage and transportation.

In the form shown in Figs. 12 and 13 the guard head 2*a* is secured to support or handle 1, as by riveting thereto at 1*d*, and the blade holder is rotative within said head along the surface 2*b* for adjusting the blade edge with respect to the guard. The holder 3 is shown provided with a finger piece 7 operative in a slot 8 in head 2*a* for convenience in rotating the blade holder to advance the blade toward and retract it from the guard teeth, the stops 2*c* and lugs 2*d*. To retain the blade holder with the blade edge in the desired shaving relation to the guard a projection 4*b* is provided on rod 4 adapted to enter spaced notches 3″ in the blade holder to retain the latter in set position respecting the guard and its head 2*a*. When the blade is to be applied to the holder or to the guard the nut 5 may be suitably unscrewed so that the rod 4 may be pushed inwardly to release its stop 4*b* from a notch 3″, whereupon the blade holder may be rotated to the right hand in Fig. 12 to release the blade from the guard lugs for replacement of the blade, and the blade holder may be rotated reversely. When the blade edge is set in the desired relation to the guard teeth the projection 4*b* may be entered in the appropriate notch 3″, the nut then being screwed tight against support 1 for retaining the parts in shaving relation.

Having now described my invention what I claim is:—

1. A safety razor comprising a guard having an annular head, an annular blade holder, means rotatively retaining the blade holder and the head one within the other for ad-

justing the blade respecting the guard, and means to retain the head and the guard with the blade in shaving relation to the guard.

2. A safety razor comprising a guard, a head having an annular surface, the guard extending beyond the head, a blade holder having an annular surface rotatively cooperative with the first named surface, whereby the guard and a blade carried by the blade holder may be adjusted respecting one another, and means to retain the head and the blade holder in set position.

3. A safety razor comprising a support, a guard having a head rotatively carried by said support, a blade holder rotatively cooperative with said head for rotary motion of the blade holder and head relatively to one another, and means to secure the head and the blade holder in set positions.

4. A safety razor comprising a support, a guard having an annular head movable relatively to the support, an annular blade holder rotatively associated with the head, and means to retain the blade holder and head in set positions with the guard and a blade in shaving relation and in a position extending along the support.

5. A safety razor comprising a support, a guard having a head, the head having a curved surface, the guard projecting outwardly from the head, a blade holder having a curved surface cooperative with the first named surface for rotation of the head relatively to the blade holder for adjusting the guard with respect to the support and the blade, and means to retain the head and blade holder in set positions.

6. A safety razor comprising a support, a guard having a head, the head having a curved surface, a blade holder having a curved surface cooperative with the first named surface for rotation of the head relatively to the blade holder, the support and the head having cooperative projection and recesses for retaining the guard in set positions respecting the blade holder, and means to retain the projection and recesses in operative relation, which means include a rod connected with the blade holder and extending into the support, a nut upon the rod cooperative with the support, and a spring within the support cooperative therewith and with the nut, whereby the spring will permit movement of the support along the rod for adjusting the projection and the recesses together and the nut will operate with the support and rod to retain the parts secured together.

7. A safety razor provided with a guard and a blade holder mounted for axial rotation of one relatively to the other, the blade holder having one or more blade retainers, and a blade provided with one or more slots adjacent to an edge thereof and adapted to receive the retainer for detachably and rotatively connecting the blade with the blade holder.

8. A safety razor as set forth in claim 7, in which the retainer is located at an edge of the blade holder.

9. A safety razor provided with a guard and a blade holder mounted for axial rotation of one relatively to the other, the blade holder having spaced blade retainers, and a blade provided with spaced slots adjacent to an edge thereof and adapted to receive said retainers for detachable and pivotal connection therewith.

10. A safety razor provided with a blade holder having spaced blade retainers, and a blade provided with spaced slots adjacent to an edge thereof and adapted to receive said retainers for detachable and pivotal connection therewith, the retainers being in hook-like form adapted to receive the slots of the blade.

11. A safety razor comprising a guard having an annular portion, a blade holder provided with means to retain a blade, the guard and blade holder being mounted one within the other for axial rotative movement relative one to another for adjusting the blade with respect to the guard, means to retain the blade upon the guard, and means to retain the guard and blade holder with a blade in shaving relation to the guard.

HENRY J. GAISMAN.