May 5, 1942. L. KUHNL 2,281,980

CONCEALED SPRING RAZOR

Filed May 1, 1941

Fig. 1.

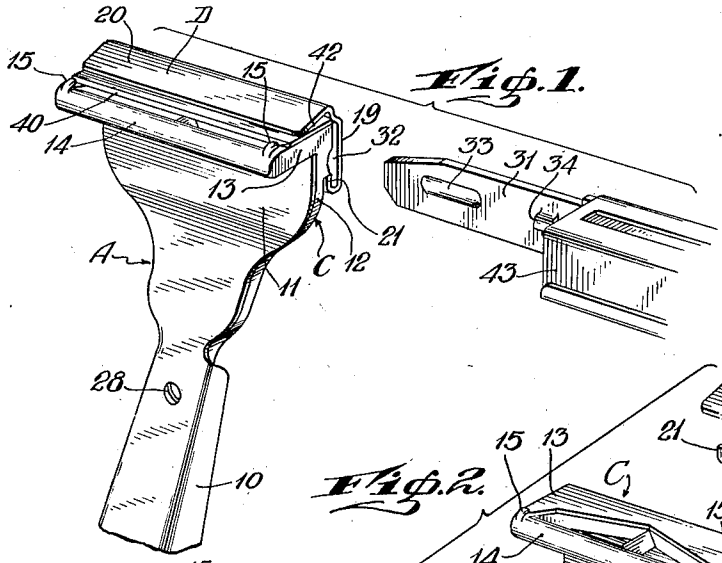


Fig. 2.

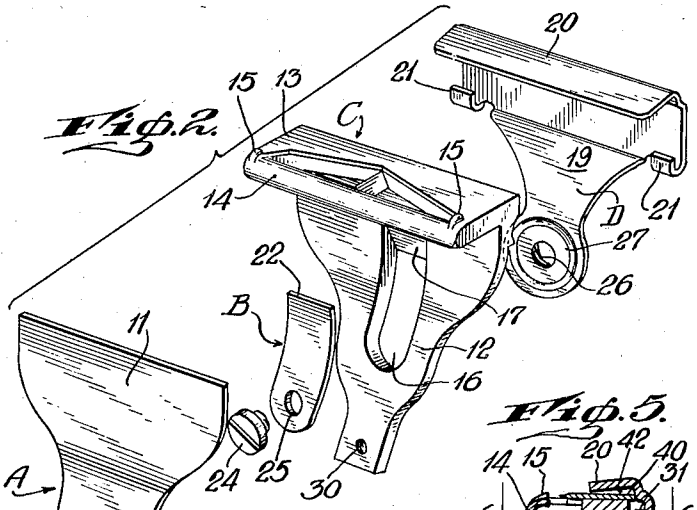


Fig. 3.

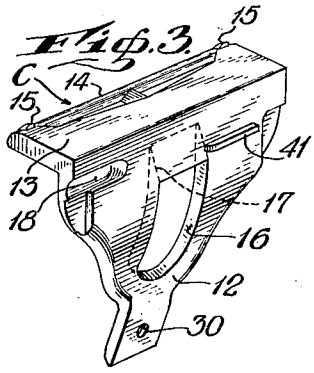


Fig. 5.

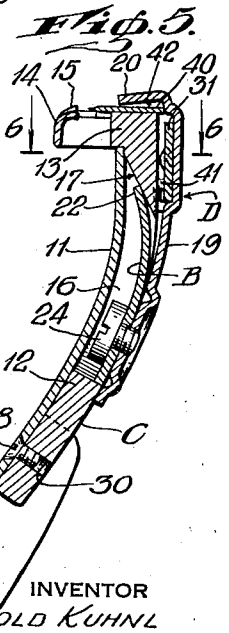


Fig. 4.

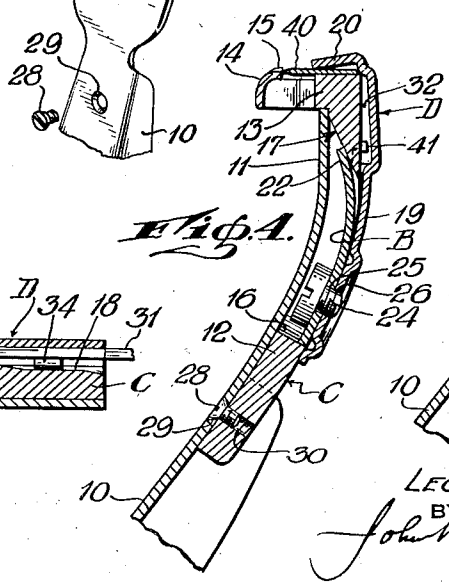
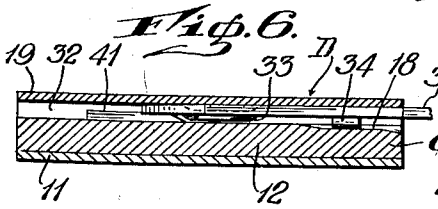


Fig. 6.



INVENTOR
LEOPOLD KUHNL
BY
John H. Hilliard
ATTORNEY

Patented May 5, 1942

2,281,980

UNITED STATES PATENT OFFICE

2,281,980

CONCEALED SPRING RAZOR

Leopold Kuhnl, Bridgeport, Conn., assignor to Magazine Repeating Razor Company, New York, N. Y., a corporation of New Jersey

Application May 1, 1941, Serial No. 391,242

6 Claims. (Cl. 30—40)

The invention relates to razors of the so-called "detachable magazine injector" type, the essential characteristics of which comprise a blade retaining channel which is enlarged by the insertion of the finger of a blade magazine injector to permit of the injection into the channel of a blade, whereupon the blade aligning finger is withdrawn permitting the parts through spring action to come together and drive the blade edge against stops properly placed to effect uniform alignment of the blade edge with the guard.

One of the objects of the invention is a razor construction of the type described, wherein the spring action which causes the blade holding parts to come together and clamp a blade is such that its change in intensity throughout the range of action of the spring is very much reduced over that which characterizes present constructions. In other words, the object is to obtain the characteristics of a "long" spring as contrasted with those of a "short" spring. The "long" spring characteristic gives a smooth action as between the finger of the magazine and its aligning slot which is very desirable for ease of operation.

Another object of the invention is a razor construction of the type described, wherein the spring which operates the blade holding parts is concealed from view and is protected against the accumulation of soap and other debris. In other words, by my construction the number of corners and crevices in which such debris commonly accumulates is reduced, and the area of smooth cleanable surface is increased.

Referring to the drawing:

Fig. 1 is a perspective view of the razor associated with a blade magazine injector;

Fig. 2 is an exploded view of the head of the razor;

Fig. 3 is a rear view of one of the blade holding members;

Fig. 4 is a view in section on the median symmetrical plane of the razor and showing a blade in position for shaving;

Fig. 5 is likewise a view on the median symmetrical plane of the razor showing a magazine finger in the aligning slot and a blade positioned as it is when the finger is so positioned;

Fig. 6 is a view on the line 6—6 of Fig. 5.

Referring in more detail to the drawing,

The part A comprises the handle 10 of channel cross-section terminating in the supporting shank 11 on which are mounted the spring B, the blade supporting member C, and the blade clamping member D (see Fig. 2). The blade supporting member C comprises the back plate 12 terminating in the blade platform 13 which is substantially a right-angled extension of it. The blade platform terminates in a guard 14 provided at its ends with blade aligning stops 15, 15. In the back plate 12 is an aperture 16, the upper wall of which is inclined as indicated at 17, thus giving a cross-section that tapers inwardly, the purpose of which will be presently explained. In the rear of the back plate is a groove 18, the purpose of which is to cooperate with the aligning finger to permit of its ready insertion as will also be presently explained.

The blade clamping member D comprises a back plate 19 preferably somewhat springy terminating in a right-angled extension 20 constituting a blade clamping plate, which cooperates with the blade platform 13 to securely but resiliently clamp a blade between them. The upturned hooks 21, 21 serve as guides for the blade magazine finger.

The parts are assembled into the relationship shown in Figs. 1, 4, and 5—i. e., the spring B occupies the aperture 16, its tip 22 bearing on the inclined surface 17, and is connected to the blade clamping member D by a screw 24 passing through the aperture 25 and threaded into the aperture 26, the enlarged portion 27 of the blade clamping plate being thus drawn against the back plate 12. Therefore, the inclined portion 17 is resiliently clamped or "pinched" between the tip of the spring B and the back plate 19 of the blade clamping member D, the spring functioning after the manner of a cantilever. Since the surface 17 is inclined the coaction of the spring and the back plate 19 urges the blade clamping plate 20 downwardly, thus producing a resilient pressure of the blade clamping plate on any blade on which it may be bearing.

The assembly just described is mounted as a unit on the shank 11 being retained in position by a screw 28 passing through the aperture 29 and into the threaded bore 30.

The objects and purposes of the construction will become clear by reference to Figs. 4 and 5. As the magazine finger 31 is inserted into the aligning slot 32, the nub 33 is initially guided by the groove 18 and the same is true of the nub 34 after the finger has been fully inserted. When this has taken place, the nub 33 has passed out of the groove 18 and bears on the rear face of the blade supporting member (see Fig. 3), thus causing the blade clamping member D to retreat to the position shown in Fig. 5, where the right-angled extension 20 is lifted and like-

wise drawn rearwardly so that a blade 40 can pass between the blade holding members without contact with the stops 15, 15. When the blade has been located as shown in Fig. 5 and the magazine finger withdrawn, the parts assume the relative positions shown in Fig. 4 by virtue of the tension of the spring B, the tip of which slides on the inclined surface 17. This action drives the blade edge against the stops and also causes the blade clamping plate 20 to bear down upon it, thus pressing it firmly against the blade platform 13.

It will be seen that the combination of the blade clamping member D and the spring B as they are assembled gives the effect of a spring having approximately the length of both of them combined, and that the result is a smooth and uniform action as the magazine finger is inserted and withdrawn. It will be further noted that by placing the spring as I have described, a number of parts which would be likely to accumulate debris are completely covered by the shank 11.

While it has nothing to do with the invention, it may be noted that the nub 41 serves to steady the magazine finger 31 against rotation whereby accurate alignment of the magazine with the blade retaining passage 42 is assured—that is to say, when the finger is in the blade aligning slot, it is bearing against the rear face of the back plate 12 by means of the nub 33 and the nub 41.

It is unnecessary to describe the details of construction of the magazine 43 inasmuch as they have nothing to do with the invention and furthermore are not only well-known commercially but are fully described in numerous United States patents, such as Rodrigues No. 1,969,945, issued August 14, 1934; Kuhnl No. 2,043,046, issued June 2, 1936; Hilliard No. 2,072,636, issued March 2, 1937; Rodrigues No. 2,109,017, issued February 22, 1938; and Kuhnl No. 2,215,003, issued September 17, 1940.

While I have described a certain particular construction in which my invention is incorporated, I do not desire to be limited to this particular embodiment since many changes and modifications may easily be made without departing from the spirit and scope of the invention as set forth in the following claims.

I claim:

1. In a razor, a shaving head comprising two members, one member including a blade platform provided with a guard and also a support for the blade platform, the blade platform and support being at an angle to each other, the second member including a back plate adjacent the support and also a blade clamping plate overlying the blade platform, the said support being provided with an aperture, a resilient cantilever secured to the said back plate and extending into said aperture with its free end bearing on the rim of the aperture and normally urging the back plate toward the support.

2. In a razor, a shaving head comprising two members, one member including a blade platform provided with a guard and also a support for the blade platform, the blade platform and support being at an angle to each other, the second member including a back plate adjacent the support and also a blade clamping plate overlying the blade platform, the said support being provided with an aperture a portion of the rim of which tapers inwardly, a resilient cantilever secured to the said back plate and extending into said aperture with its free end bearing on said tapered portion and normally urging the back plate toward the support.

3. In a razor, a shaving head comprising two members, one member including a blade platform provided with a guard and also a support for the blade platform, the blade platform and support being at an angle to each other, the second member including a back plate adjacent the support and also a blade clamping plate overlying the blade platform, the said support being provided with an aperture a portion of the rim of which tapers inwardly, a resilient cantilever secured to the said back plate and extending into said aperture with its free end bearing on said tapered portion and normally urging the back plate toward the support and the blade clamping plate toward the blade platform.

4. In a razor, a shaving head comprising two members, one member including a blade platform provided with a guard and also a support for the blade platform, the blade platform and support being at an angle to each other, the second member including a back plate adjacent the support and also a blade clamping plate overlying the blade platform, the said support being provided with an aperture, a resilient cantilever secured to the said back plate and extending into said aperture with its free end bearing on the rim of the aperture and normally urging the back plate toward the support, the two members being mounted as a unit on a shank that covers the cantilever.

5. In a razor, a shaving head comprising two members, one member including a blade platform provided with a guard and also a support for the blade platform, the blade platform and support being at an angle to each other, the second member including a back plate adjacent the support and also a blade clamping plate overlying the blade platform, the said support being provided with an aperture a portion of the rim of which tapers inwardly, a resilient cantilever secured to the said back plate and extending into said aperture with its free end bearing on said tapered portion and normally urging the back plate toward the support, the two members being mounted as a unit on a shank that covers the cantilever.

6. In a razor, a shaving head comprising two members, one member including a blade platform provided with a guard and also a support for the blade platform, the blade platform and support being at an angle to each other, the second member including a back plate adjacent the support and also a blade clamping plate overlying the blade platform, the said support being provided with an aperture a portion of the rim of which tapers inwardly, a resilient cantilever secured to the said back plate and extending into said aperture with its free end bearing on said tapered portion and normally urging the back plate toward the support and the blade clamping plate toward the blade platform, the end members being mounted as a unit on a shank that covers the cantilever.

LEOPOLD KUHNL.