Sept. 25, 1951 J. T. HELLMANN 2,569,167

SAFETY RAZOR

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Fig. 1.

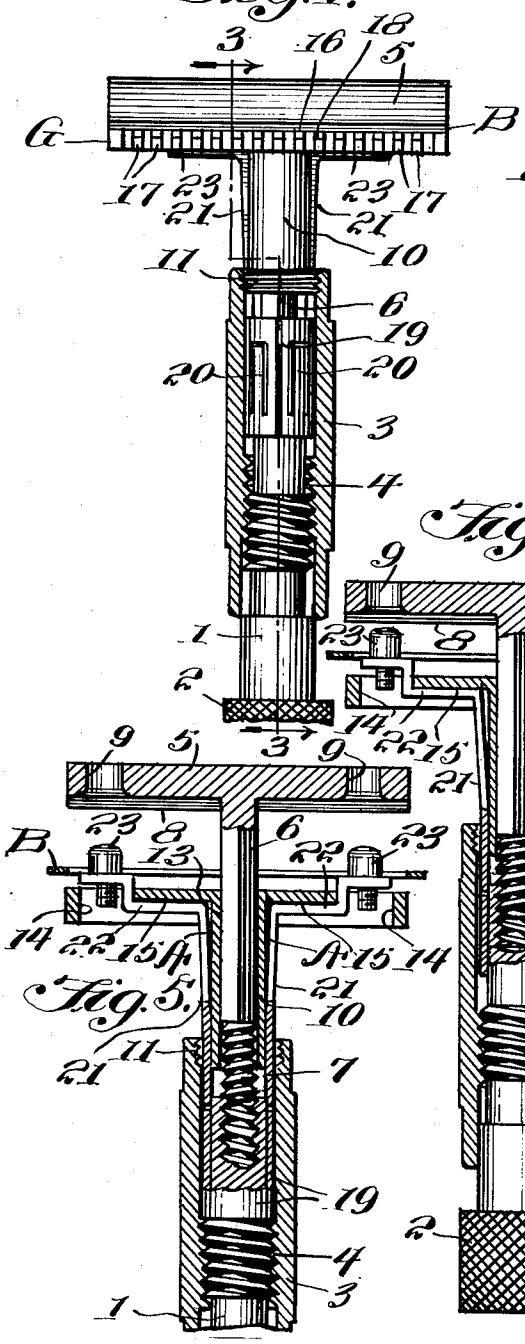


Fig. 2.

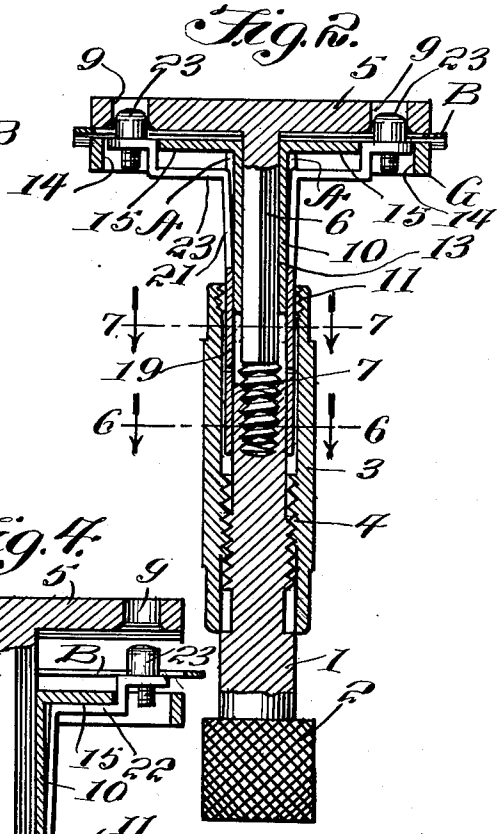
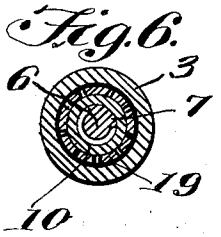


Fig. 4.

Fig. 5.

Fig. 6.



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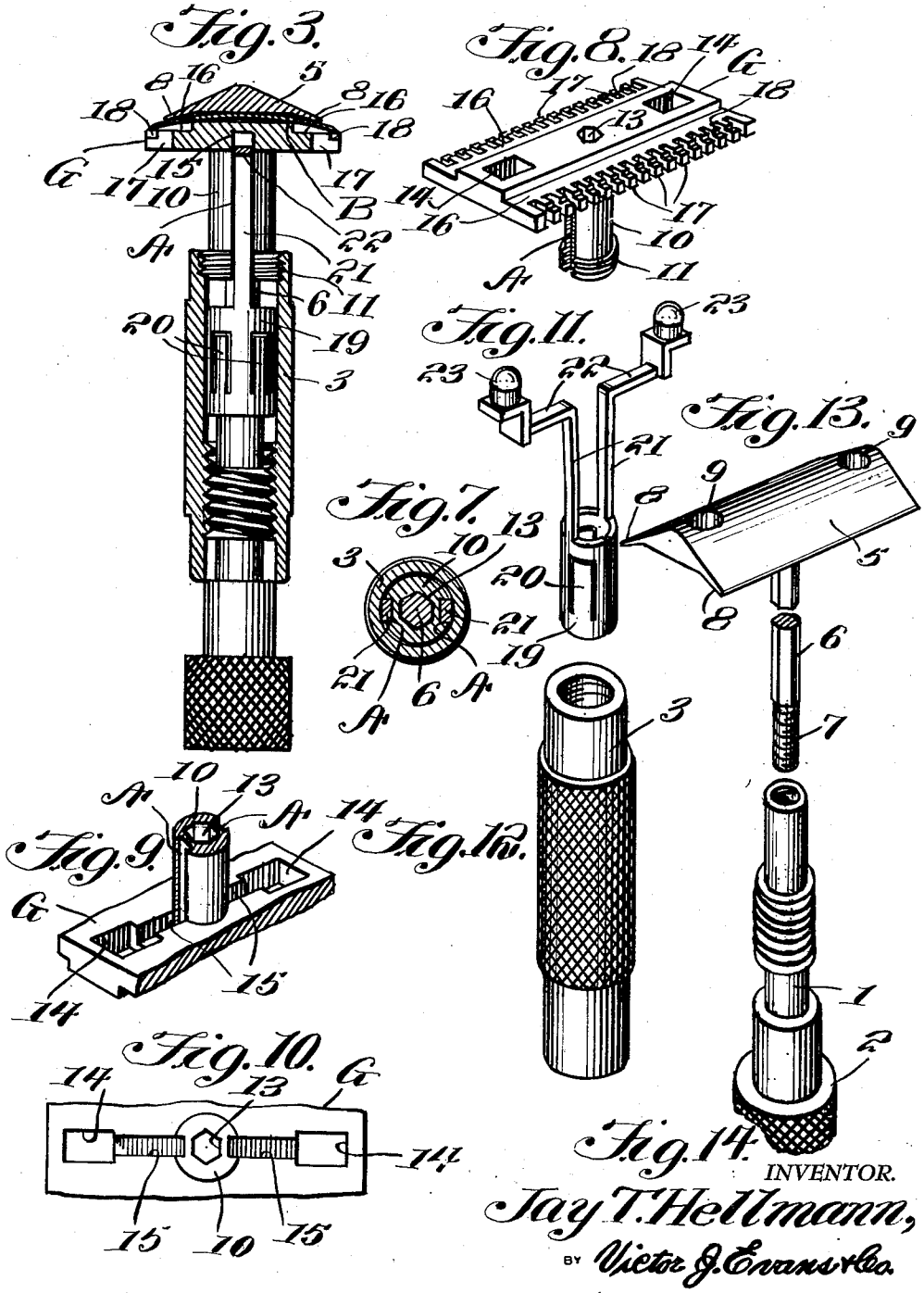

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Patented Sept. 25, 1951 2,569,167

UNITED STATES PATENT OFFICE

2,569,167

SAFETY RAZOR

Jay T. Hellmann, Chicago, Ill.

Application August 26, 1948, Serial No. 46,290

3 Claims. (Cl. 30—73)

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My present invention relates to improvements in safety razors in the broad class of cutlery, and it involves certain novel features of construction and combinations and arrangements of parts as will hereinafter be described, and more particularly set forth in the appended claims. By the embodiment of my invention as illustrated in the drawings the separable parts of the device may, with facility and low cost of production, be manufactured, and assembled with convenience, to provide a razor with superior cutting qualities; the parts may readily be clamped together for use, and with equal facility they may be partially separated for cleansing and drying; as well as for changing blades when necessary.

In the accompanying drawings I have illustrated a complete example of a physical embodiment of my invention in which the parts are combined and arranged in accord with one mode I have devised for the practical application of the principles of my invention. It will however be understood that changes and alterations are contemplated and may be made in these exemplifying drawings and mechanical structures, within the scope of my claims without departing from the principles of the invention.

Figure 1 is a view in elevation of a safety razor in which my invention is embodied, showing the handle sleeve in section; and Figure 2 is a vertical sectional view.

Figure 3 is a sectional view at line 3—3 of Fig. 1.

Figure 4 is a sectional view similar to Fig. 2 with parts unclamped and partially separated for cleansing and drying.

Figure 5 is a sectional view showing the guard plate unclamped to release the blade and permit removal of the blade.

Figures 6 and 7 are sectional views at lines 6—6 and 7—7 of Fig. 2.

Figure 8 is a detail perspective view of the guard plate.

Figure 9 is an inverted perspective view of the guard plate; and Figure 10 is a top plan of the central portion of the guard plate.

Figure 11 is a perspective view of the spring blade holder. Figure 12 is a perspective view of the handle sleeve.

Figure 13 is a perspective view of the clamp plate or clamp head; and Figure 14 is a perspective view of the handle.

In the preferred form of the invention, the handle includes a screw bar or handle 1 having an enlarged knob 2, and a tubular member or gripping sleeve 3 mounted on the bar and provided with left hand screw threads 4. The clamping block, head, or plate 5 for the blade B is fashioned with plane faces disposed at an obtuse angle to permit facile strokes of the razor, and a post 6 angular in cross section and integral with the clamp head, is threaded at 7 into the upper tubular end of the handle bar with right hand threads that are instrumental in drawing the head into clamped position over the blade.

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At its lateral edges, the clamp head is reduced to form comparatively thin lips 8, 8 that project over the cutting edges of the blade B, and the head is provided with spaced holes 9, 9, near its ends, to guide and seat various parts into working position and to release the parts.

The blade B is clamped between the clamp head and its lips and a guard plate indicated as a whole by the letter G, and the guard plate is fashioned with an integral tubular stem 10 that is externally threaded to provide a right hand threaded engagement at 11 with the internally threaded upper end of the clamping sleeve 3 of the handle.

As seen in Fig. 8 the guard plate G is fashioned with a central angular bore 13 that fits over the post 6 of the clamp head, and two spaced oblong slots 14, 14 in its under face are connected by grooves 15 that extend from the tubular stem to the respective slots.

Along its lateral portions, the guard plate is stepped down to its guarding edges, and for this purpose two parallel ledges 16 of the plate are fashioned with notches or lugs and grooves to form the guard teeth 17 extending from end to end of the guard plate, and an additional step or ledge 18 is fashioned on the teeth 17, except for the pair of end teeth at the opposite sides of the plate and against which the lips 8, 8, bear, resiliently. By this construction and arrangement of parts the lips 8 clamp the cutting edges of the blade against the stepped ledge and teeth of the guard plate to provide the necessary clearance for the cutting edges at the tip edges of the stepped teeth.

For guiding and retaining the blade in accurately adjusted position a spring blade holder is provided, as best shown in Fig. 11 that includes a split resilient, friction clamp-sleeve 19, having resilient tongues 20 struck from its walls, which has a sliding fit over the upper internally threaded end of the handle bar 1. The clamp sleeve is fashioned with a pair of spaced diametrically arranged angle or L-shaped arms 21, flat in cross section, the upright portions of which fit into complementary grooves A, A in the ex-

terior face of the tubular stem 10, and the horizontal portions of the arms fit into the grooves 15, 15 in the under face of the guard plate.

The angular, spring arms 21 terminate in angular heads 22 that project into the slots 14 of the guard plate, and the heads are provided with usual studs or pins 23 that project upwardly through the usual spaced holes of the blade B and into the sockets or holes 9, 9 of the clamp head.

In Figs. 1 and 2, the blade is clamped in operative position by first turning the handle bar so that the right hand threads 7 pull the blade with the head and guard plate into position so that the sleeve 1 may be turned to pull the holder and the cutting unit into clamped and operative position.

For cleansing and drying the parts after shaving, the parts may be turned to position of Fig. 4 where they are separated, and then swung to and fro through the shaving water to remove soap and accumulated hairs, after which the parts may be dried in suitable manner, and then restored to shaving position.

For changing blades, the head is first unthreaded from the handle bar and withdrawn from the blade and guard plate, as indicated in Fig. 5, so that the used blade may be lifted from the holder, and a fresh blade may be applied thereto, after which the parts are screwed together for clamping the blade in shaving position.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a safety razor as described, the combination with a clamping head provided with holes, and a post polygonal in cross section, a guard plate having a tubular stem rigid with the post and longitudinally extending exterior grooves in said stem, said guard plate having spaced slots, and exterior grooves in its under face, of a blade provided with holes, and a blade holder, said holder having a resilient clamp sleeve surrounding the tubular stem, a pair of angular and resilient arms rigid with the clamp sleeve and engaged in the grooves of the tubular stem and guard plate, angular heads on said arms projecting into the slots of the guard plate, retaining studs on said angular heads projecting through holes in the blade and clamping head, a handle bar threaded on the post, and a handle sleeve threaded on the bar for clamping the resilient sleeve.

2. In a safety razor, the combination which comprises a razor head having a polygonal post extended from the center of the under surface thereof with threads on the extended end of the post and with openings in the said head and spaced from the ends thereof, a handle having a stem with a finger gripping knob on one end, a threaded socket in the opposite end and threads on the outer surface positioned with the threaded socket thereof threaded on the threads of the end of the post, a guard plate having a tubular stem nested under the head and positioned with the tubular stem thereof fitted over the post of the head, said stem of the guard plate having threads on the end thereof extended from the plate, said guard plate having notches therein spaced from the ends and positioned to register with the said openings spaced from the ends of the head. a gripping sleeve having spaced threads therein positioned over the stem of the handle and extended over the threads of the tubular stem of the said guard plate, and a clamp sleeve positioned on the stem of the handle and having L-shaped spring arms with studs on extended ends thereof mounted with the said spring arms under the said guard plate and positioned whereby the said studs extend into the slots of the guard plate and openings of the head for positioning and retaining razor blades between the guard plate and head.

3. In a safety razor, the combination which comprises a razor head having a polygonal post extended from the center of the under surface thereof with threads on the extended end of the post and with openings in the said head and spaced from the ends thereof, a handle having a stem with a finger gripping knob on one end, a threaded socket in the opposite end and threads on the outer surface positioned with the threaded socket thereof threaded on the threads of the end of the post, a guard plate having a tubular stem nested under the head and positioned with the tubular stem thereof fitted over the post of the head, said stem of the guard plate having threads on the end thereof extended from the plate, said guard plate having notches therein spaced from the ends and positioned to register with the said openings spaced from the ends of the head, a gripping sleeve having spaced threads therein positioned over the stem of the handle and extended over the threads of the tubular stem of the said guard plate, and a clamp sleeve positioned on the stem of the handle and having L-shaped spring arms with studs on extended ends thereof mounted with the said spring arms under the said guard plate and positioned whereby the said studs extend into the slots of the guard plate and openings of the head for positioning and retaining razor blades between the guard plate and head, the under surface of the said guard plate having longitudinally disposed slots therein positioned to receive outwardly extended sections of the said L-shaped spring arms and the threads on the end of the tubular stem of the guard plate also having slots extended therethrough and said slots of the threads of the tubular stem being positioned to receive the said L-shaped spring arms.

JAY T. HELLMANN.

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