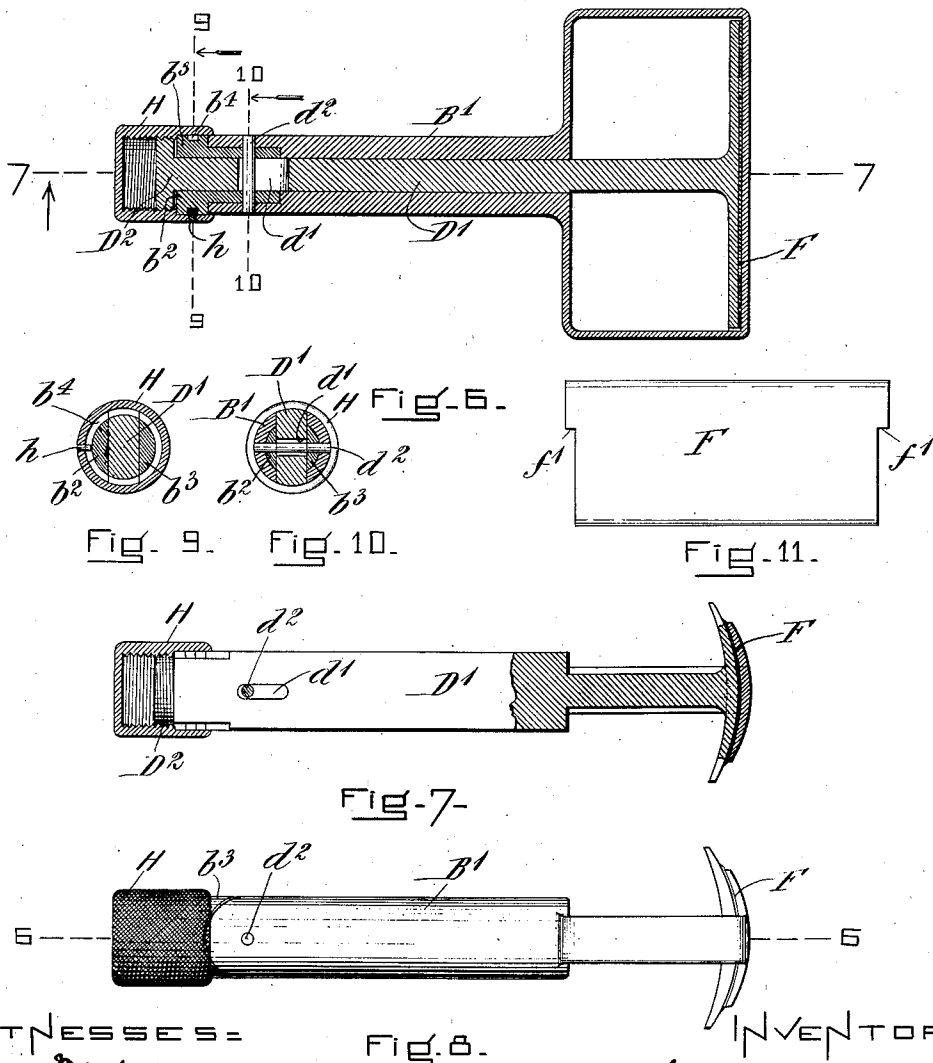


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SAFETY RAZOR.
APPLICATION FILED MAR. 1, 1909.

944,989.

Patented Dec. 28, 1909.
2 SHEETS—SHEET 2.



WITNESSES=
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FIG. 8.

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UNITED STATES PATENT OFFICE.

FRANK M. EDMONDS, OF BOSTON, MASSACHUSETTS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO GILLETTE SAFETY RAZOR COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MAINE.

SAFETY-RAZOR.

944,989.

Specification of Letters Patent.

Patented Dec. 28, 1909.

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To all whom it may concern:

Be it known that I, FRANK M. EDMONDS, of Boston, in the county of Suffolk and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in Safety-Razors, of which the following is a specification.

The main inconvenience of safety razors of what may be termed the Gillette type where the blade is clamped between a back piece and a guard or clamp, lies in the fact that in the only practical form of this razor which has appeared on the market the holder has to be taken entirely apart to insert and adjust or remove the blade.

My invention pertains to an improved form of holder wherein the various parts are so connected together that they never are detached one from the other in the ordinary use of the razor. This is due primarily to the fact that what may be termed the handle and the back piece are made in one piece, the clamp mechanism being attached thereto in such a way that the clamping operation may take place by the manipulation of the parts without their separation. In the ordinary form of Gillette razor the back piece is separate from the handle which carries the clamp.

My invention will be understood from the drawings in which two embodiments thereof are shown.

Figure 1 is a section on line 1—1 of Fig. 2, and Fig. 2 is a side elevation of a blade holder embodying my invention. Fig. 3 is a section on line 3—3 of Fig. 2. Fig. 4 is a section on line 4—4 of Fig. 3. Fig. 5 shows a plan of blade adapted to be used in my holder. Fig. 6 is a section on line 6—6 of Fig. 8. Fig. 7 is a section on line 7—7 of Fig. 6. Fig. 8 is a side elevation of the modification shown in Figs. 6 and 7. Figs. 9 and 10 are sections on lines 9—9 and 10—10 of Fig. 6. Fig. 11 is another form of blade.

In all these views A is a back plate which is of a well known form but which is connected by arms *a* with the handle B. These arms *a* are bail-shaped to afford plenty of space between the back plate and the handle for the manipulation of the blade and the clamp or guard piece and the parts connected thereto.

In the form of my invention shown in

Figs. 1, 2, 3 and 4, the clamp is lettered C and is mounted on the end of an extensible rod D pivoted in the handle. The handle is slotted for the greater part of its length as shown at *b*, the walls of the slot being flat and parallel and the rod D is pivoted in said slot at *d*, the rod having two of its sides which normally run within the slot flat and parallel so that it may be swung in and out from the slot. Adjustability is given to the clamp C by reason of a nut E which is attached to the lower end of the rod D by a pin *e* and groove *e*¹, this construction allowing the nut to be turned in either direction on the end of the rod without becoming detached therefrom. The end of the rod is narrow as at *d*² to form a centering stud which sets into a socket *c* in the shank *c*¹ of the clamp C. I prefer to make the end of the rod square as shown and the socket of the shank also square to receive this stud so that the clamp will always remain in position to register with the back piece. Of course any other convenient shape may be given to the stud and the socket which will maintain the parts in that relation. The outer surface of the shank *c*¹ is threaded to fit the threads within the nut E so that by turning the nut in either direction the clamp piece is forced toward the back piece A to clamp a blade against it, or withdrawn therefrom, as the case may be. The blade is lettered F, and in the form thereof shown in Fig. 5 is provided with holes *f* which fit over pins *a*¹ projecting from the upper surface of the back piece. The clamp C is slotted as at *c*² (see Fig. 3), to allow the clamp to be moved with relation to the pins *a*¹ in the back piece. In operation the closed ends of the slots bring up against the pins *a*¹ when the clamp is properly placed to center the clamps with regard to the back piece. To adjust the blade in position in this razor it is only necessary to turn the nut E in the proper direction to withdraw the clamp C a short distance from the back piece A and then swing the rod D out from the handle about the pin *d* as far as may be necessary in the direction indicated by the dotted lines in Fig. 1. The blade F is then placed in position with its openings *a* over the pins *a*¹ after which the rod and clamp are swung back so that the ends of the slot *c*² abut against the pins *a*². The nut is then turned

to drive the clamp against the back piece with sufficient pressure to hold the blade properly in place. The simplicity and convenience of this arrangement is one which will appeal to all who have had occasion to use the ordinary safety razor of this type.

A similar arrangement is shown in Figs. 6 to 10, inclusive, but in this case the nut is lettered H and is headed, being located at the outer end instead of the inner end, as in the other views. The handle B¹ is slotted throughout its entire length, the walls of the slot being parallel as before and the rod lettered D¹ lies in this slot having also parallel walls as before. The outer end of the handle is recessed to receive two portions of a bushing b², b³, these portions being similar in all respects and aligned with the slot in the handle in such a way as when in place to form continuations of the slot. The rod D¹ is slotted crosswise as at d¹ and a pin d² serves both to rivet these parts together and also as a pivot about which the rod D¹ may swing when free so to do. The bushing b², b³ and the rod D¹ are provided with a continuous groove b⁴, and the nut H is provided with a pin h which rides in said groove to hold the nut in place upon the razor. The rod D¹ has at its outer end a head D² which is threaded on its interior and engages with threads upon the interior of the nut H so that the rotation of the nut will cause the withdrawal of the clamp C from the back piece. The back piece may be provided with pins like the pins a¹ shown in the other form of my invention in which case the clamp will have slots c², or the pins a¹ may be omitted as well as the slots c², in which case the blade may be made as shown in Fig. 11, where it is provided with shoulders f¹ adapted to engage with the arms a when the blade is put in position in the razor, thus being properly centered and lending itself to the clamping operation due to the proper manipulation of the nut H.

It will be noted as stated above that in neither of these forms of razor are there detachable parts except of course the blade, and that there is a reasonable space allowed for the proper and easy manipulation of the blade. The radical difference which seems to exist between this razor and razors of this class which have heretofore been made, so far as I know, lies in the fact that the back piece and the handle are so constructed that no adjustment exists between them, the adjustment being caused by the manipulation of the clamping or upper piece of the razor which is so constructed that it may be adjusted toward and from the back piece and if necessary swung out to allow the blade to be easily removed and the parts thoroughly cleaned.

It will be noted that in the form of my invention shown in Figs. 1 to 4, inclusive,

the parts are so arranged that the clamp is always in position to register with the sides or edges of the back piece, and provision is also made by reason of the pins a¹ and slots c² whereby when swung into position the clamp is properly centered with relation to the back piece and blade.

What I claim as my invention is:

1. In a safety razor, a handle, a back piece fixedly mounted thereon, a clamp, a pivoted rod and means whereby said clamp may be adjusted thereon toward and from said back piece, said rod being adapted to be swung out from its clamping position with relation to said back piece to expose said back piece for cleaning and for the reception and delivery of the said blade, as set forth.

2. In a safety razor, a handle, a back piece fixedly mounted thereon, a rod pivoted to said handle to swing into and out of alignment therewith, a clamp connected to said rod whereby said clamp may be swung into and out of registration with said back piece, means whereby said clamp may be adjusted on said rod toward and from said back piece, and means whereby a blade may be centered between said back piece and said handle as set forth.

3. In a safety razor, a handle, a back piece integral therewith, a clamp adapted to clamp a blade against said back piece, means whereby said clamp is connected to said handle to be moved into and out of register with said back piece, means whereby the clamp may swing in a direction normal to the back piece, said back piece having centering pins adapted to receive and center a blade and said clamp having slots adapted to cooperate with said pins in centering said clamp against said back piece and holding it centered whereby said clamp when in operative relation with said blade and said back piece will be held from lateral movement with relation thereto.

4. In a safety razor, a handle, a back piece integral therewith, and a clamp adapted to clamp a blade against said back piece, said clamp being mounted on a cross axis whereby it may be swung in and out from its clamping position and also being provided with means whereby it may be moved in a direction toward and away from said back piece, said back piece having centering pins adapted to receive and center said blade, and said clamp having slots registering with said pins whereby said clamp may be swung into and out from a position registering with said back piece, as set forth.

5. In a safety razor, a handle, a back piece fixedly attached thereto, a rod pivotally mounted in said handle to swing into and out of alignment therewith, a clamp and means connecting said clamp and said rod whereby said clamp may be adjusted toward and from said back piece, and means for

maintaining the clamp in position to register with said back piece while out of clamping position, as described.

6. In a safety razor, a handle, a back piece
5 fixedly attached thereto, a rod mounted in
said handle, and a clamp, and means for
maintaining the clamp in position to register
with said back piece when out of clamping
position, said means comprising a shank and
10 a stud attached one to the rod and the other
to the clamp, said stud being angular in
cross section and said clamp containing a
socket shaped to receive said stud, whereby
said clamp and said rod will have a sliding
15 relation to each other, and means engaging
both said shank and said stud whereby said

clamp may be adjusted toward and from
said back piece, as described.

7. In a safety razor, a handle, a back piece
fixedly attached thereto, a rod mounted in 20
said handle, a clamp, and means connecting
said clamp and said rod whereby said clamp
may be adjusted in a direction toward and
from the plane of said back piece, and means
connecting said clamp and said handle 25
whereby said clamp may be swung into and
out of the plane of said handle, as described.

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Witnesses:

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