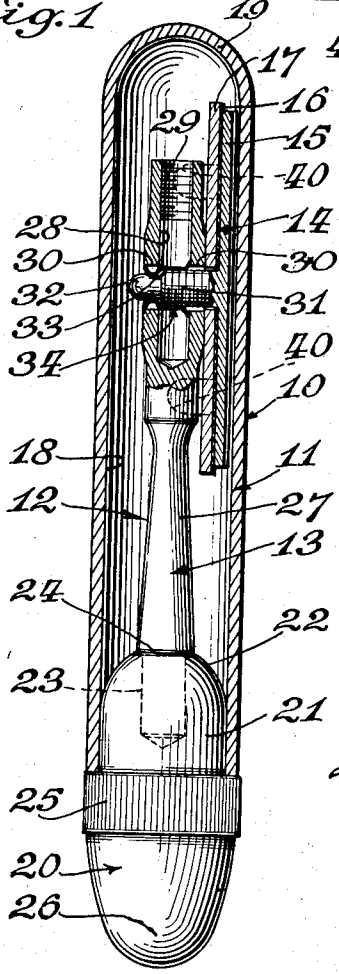
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SAFETY RAZOR

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Fig. 1



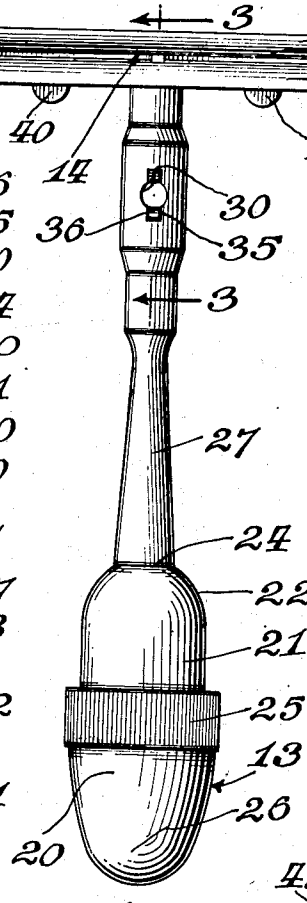
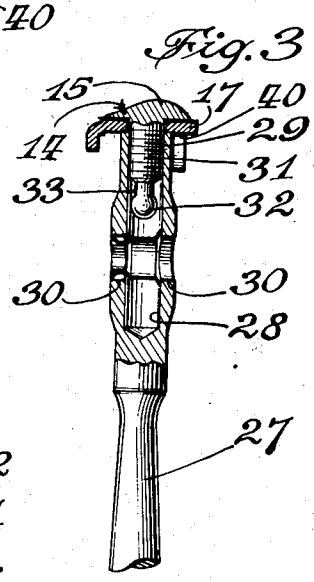


Fig. 2

Fig. 3



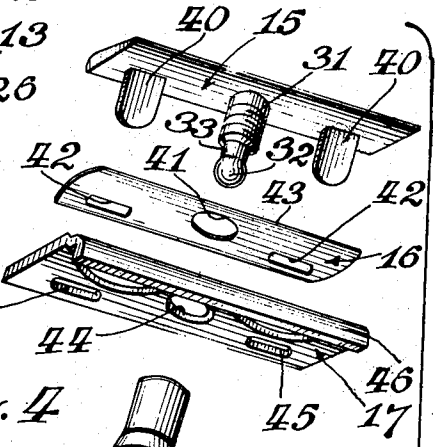


Fig. 4

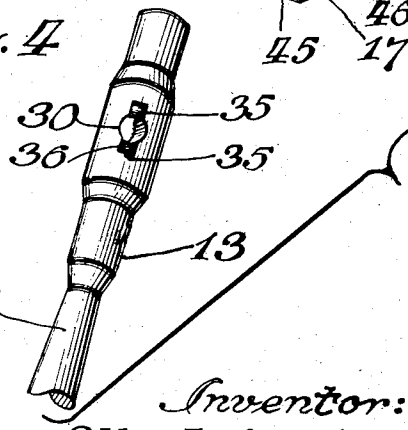
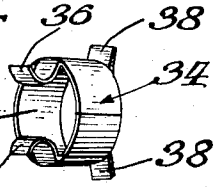


Fig. 5



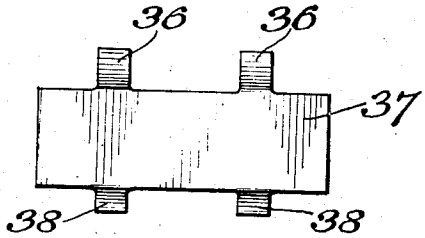


Fig. 6

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Fig. 7

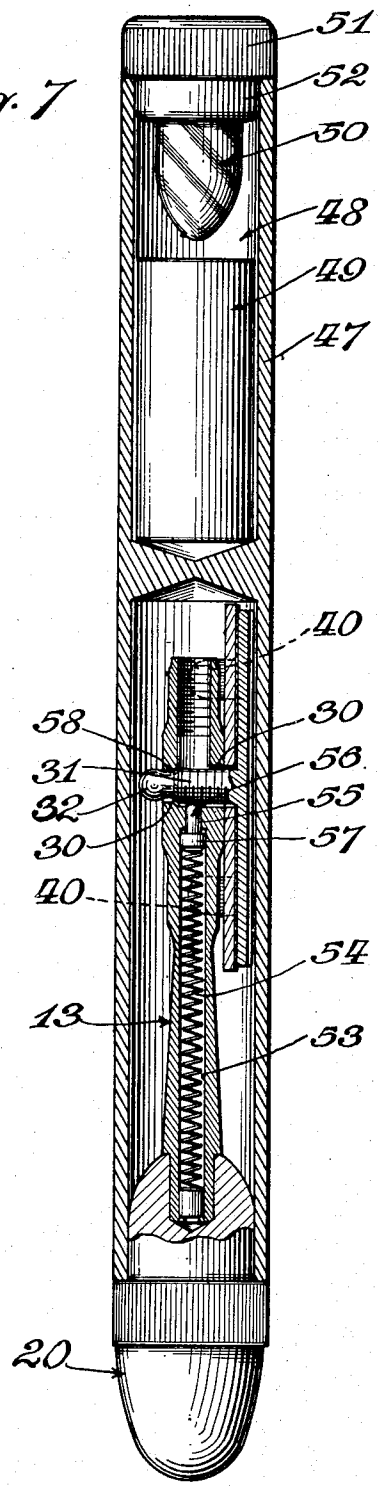


Fig. 8

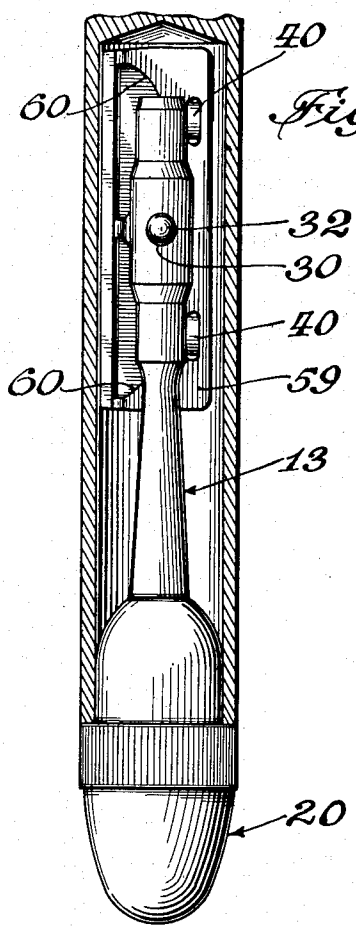
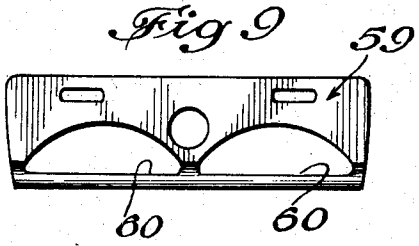


Fig. 9



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UNITED STATES PATENT OFFICE

2,065,585

SAFETY RAZOR

Otto J. Herb, Chicago, Ill.

Application August 17, 1934, Serial No. 740,241

7 Claims. (Cl. 30—47)

The present invention relates to safety razors and is particularly concerned with portable razors of the type adapted to be housed in a small tubular casing which may be carried in the pocket of the user like a fountain pen or pencil.

One of the objects of the invention is the provision of an improved safety razor in which the blade supporting member is adapted to be removed from its normal position which is at right angles to the handle and secured to the handle with the major axis of the member extending longitudinally of the handle and closely adjacent thereto, so that the entire assembly may be placed in a small tubular casing.

Another object of the invention is the provision of a plurality of improved structures for securing the head of the safety razor to the handle with the major axis of the head extending longitudinally of the handle.

Another object of the invention is the provision of an improved collapsible safety razor structure which may be secured in collapsed position without possibility of rattling and in such position as to protect the blade.

Other objects and advantages of the invention will be apparent from the following description and accompanying drawings in which similar characters of reference will indicate similar parts throughout the several views. Referring to the drawings, of which there are two sheets:

Fig. 1 is a side elevational view of a preferred form of the invention with the housing and part of the razor structure in section on a plane passing through the axis of the handle and with the razor in collapsed position;

Fig. 2 is a side elevational view of the razor in assembled position;

Fig. 3 is a sectional view of the head and end of the handle, taken on the plane of the line 3—3 of Fig. 2 looking in the direction of the arrows with the stud shown in elevation;

Fig. 4 is an exploded view of the handle, guard, blade and clamping member in position to be assembled;

Fig. 5 is a view in perspective of a resilient collar used for securing the shank of the head to the handle in the position of Fig. 1;

Fig. 6 is a plan view of the blank used in making the collar of Fig. 5;

Fig. 7 is a view similar to Fig. 1 of a modification having a different form of securing device for the shank of the razor head and having an improved form of housing for supporting a styptic pencil and supply of shaving soap;

Fig. 8 is a side elevational view of the razor of Fig. 7 taken from the left, with the housing in section showing the cooperation of the lugs on the clamping member with the handle of the razor; and

Fig. 9 is a plan view of the guard which is employed in the modification of Fig. 7.

Referring to Fig. 1, 10 indicates in its entirety a complete razor structure which comprises a housing 11 for the collapsible razor 12. The collapsible razor 12 comprises a handle 13 and a razor head 14, consisting of a clamping member 15, blade 16 and guard 17. The housing 11 preferably comprises a tubular member which may be formed of "Bakelite" or other suitable plastic or metallic substance, and which is similar in shape and size to the modern fountain pen.

The housing 11 is provided with a cylindrical bore 18 which is closed at one end 19 in the embodiment of Fig. 1 and the other open end may be closed by a closure knob 20. The closure knob 20 is provided with a substantially cylindrical portion 21 of a size complementary to the bore 18 so that the cylindrical portion 21 has a close frictional fit in the bore, capable of holding the parts in the position of Fig. 1. If desired, however, both the cylindrical portion 21 and the adjacent part of bore 18 may be provided with complementary threads. The cylindrical member 21 is rounded or tapered at 22 so as to aid in centering the plug in the end of the bore 18, and the plug is preferably provided with a bore 23 for receiving the reduced end of the handle 13 which has an annular shoulder 24 abutting against the plug.

Adjacent the cylindrical portion 21 the closure plug 20 is enlarged at 25 so that its outer surface is flush with the exterior of housing 11 and this cylindrical surface may be knurled or made polygonal in shape to facilitate grip of the plug by the fingers. The extreme end 26 of the plug may take any ornamental shape but in the embodiment of Fig. 1 it is extended and rounded to provide a convenient handle.

The handle 13 comprises a metal member which may be provided with a tapered shank 27 and the upper end of the handle may be provided with an elongated cylindrical bore 28 which is threaded at its extreme end 29. A transverse bore 30 communicates with the bore 28 and provides a socket for the shank 31 of the razor head when the razor is collapsed, as shown in Fig. 1.

The threaded portion 29 of bore 28 is threaded

to receive the threaded shank 31 and these parts provide a force-multiplying means for clamping the razor blade 16 between the guard 17 and clamping member 15 when the parts are in the position of Fig. 2. The shank 31 is also preferably provided with a ball-shaped lug 32 at its extreme end and there is an annular groove 33 between the ball 32 and the threaded portion 31 which serves to cooperate with a retaining member 34 shown in perspective in Fig. 5. The transverse bore 30 communicates at one side with a longitudinally extending slot 35 which is adapted to receive the curved, resilient spring lugs 36 on the retaining member 34.

Referring to Fig. 6, this is a plan view of the blank used in making the retaining member 34 which may be constructed of any resilient sheet metal, preferably some non-corrodible metal such as spring brass or bronze. This blank has its rectangular body 37 bent to form a cylinder, as shown in Fig. 5, and the two lower lugs 38 are bent out at right angles for the purpose of retaining member 34 in its socket, as will be described in greater detail hereinafter.

The longer lugs 36 at the top of the blank are each curved inward and outward, as shown in Fig. 5, to provide resilient gripping fingers which engage in the groove 33 underneath the ball member 32, as shown in Fig. 1. The width of the blank 37 is such that it may be inserted in the bore 30 by pressing the circlet together until the lugs 38 pass the bore 30 on the right-hand side. When the retaining member 34 has reached its final position, the lugs 38 engage inside the bore 28 and permanently hold this retaining member in the position of Fig. 1, The shank 31 of the safety razor head may then be inserted in the cylindrical bore 39 of the retaining member until the head 32 is gripped by springs 36.

Referring to Fig. 4, the details of the razor are shown in this figure. The handle 13 has already been described, as well as the shank 31 of the clamping member 15. The clamping member 15 comprises a flat metal member rectangular in plan and tapered in thickness toward the side which is adjacent the cutting edge. The shank 31 projects downward at right angles from a central part of the clamping member 15.

A pair of lugs 40, which are rectangular in section and provided with flat sides, also project downwardly in the same direction as the shank 31 but are spaced from the shank 31 at each end of the guard and are also located laterally from the shank 31 in such manner that lugs 40 engage the side of the handle when the shank 31 is in the bores 30, 39. The lugs 40 thus prevent rotation of the head assembly when the parts are in the position of Fig. 1.

The razor blade comprises a tempered flat resilient blade rectangular in plan and having a centrally located aperture 41 for receiving shank 31. Rectangular apertures 42 are suitably located at each end and toward the back of the blade to receive the lugs 40. In the present embodiment a single edge blade is shown, the edge being at 43, but it will be obvious that the razor might be made double edged.

The guard member 17 comprises a sheet metal member provided with a registering circular aperture 44 for receiving the shank 31 and with the registering elongated slots or apertures 45 for receiving the lugs 40. A downwardly turned flange 46 is provided at its forward edge for guarding and protecting the blade 16 and when the blade, guard and clamping member are assembled with handle 13, the blade is clamped between the clamping member 15 and guard 17 by means of threads on 31.

If desired, one of the lugs 40 and its complementary aperture 45 may be made slightly wider than the other to prevent improper assembly of the head 15 on the guard 17. The apertures 42 in the blade may be made of the same width as the widest lug 40, since improper assembly of the blade on the head 15 is precluded because of the position of the stud 31.

When it is desired to place the razor in its casing, the head assembly is removed from the handle and shoved into the bores 30, 39 where the head 32 is gripped by spring fingers 36. The complete collapsed assembly may then be slid into the housing 11, as shown in Fig. 1.

Referring to Figs. 7 to 9, this is a modification in which the details of the lower part of the housing may be substantially as described. The upper end of the housing is provided with a tubular extension 47 having a cylindrical bore 48 within which may be disposed a supply of shaving soap 49 and a styptic pencil 50, which is held by the closure cap 51. The closure cap 51 may be similar in structure to the closure cap 20 having a cylindrical portion 52 which has a close frictional fit with the interior of the bore 48.

In this embodiment the handle 13 is provided with an elongated bore 53 for receiving the compression spring 54. The bores 30 are not provided with the spring retaining member 34 but a counterbore 55 slidably receives a headed plunger 56, the head 57 being disposed in bore 53 and engaged by the spring 54. The plunger 56 forces the shank 31 toward the upper side of the bore 39 so that the edge 58 of the handle surrounding bore 39 engages beneath the head 32. In this embodiment a different form of guard 59 is employed, having two cut-out portions 60, but the shape and structure of the guard may be varied considerably without departing from the spirit of the invention. It will thus be observed that I have invented a new, collapsible safety razor which may be housed in a casing no larger than the ordinary fountain pen.

The parts are assembled for use by removing the closure plug 20 and pressing upon the head 32 with the thumb to remove the shank 31 from bore 30. Then the shank 31 is threaded into the bore 29 and the razor used with its parts in the position of Fig. 2.

When the parts are collapsed and housed in the casing 11 there is no danger of rattling or damage to the blade and the parts are securely held together and rotatiton is prevented by the lugs 40. By means of the improved housing of Fig. 7 all of the essential supplies needed for shaving may be carried in one tubular housing, thereby eliminating the necessity for carrying a number of bulky toilet articles.

From the foregoing description it will appear that I have invented a very compact razor which can without inconvenience be carried by a person when traveling, and used with facility. The head of the razor is very narrow, making it possible to shave very close on the various parts of the face which are frequently exceedingly difficult to shave with an ordinary razor. For example, the portion of the upper lip directly be-

neath the nose may be readily shaved, and in fact the razor blade and head is so small that it may be used to remove hair growing partially within the nostrils. The razor is also very convenient for use in shaving the arm pits and has numerous applications in connection with shaving done preparatory to surgery.

As illustrative of the compactness of the razor, the outside diameter of the tube 10 of the embodiment shown in Fig. 1 is ½", and the blade is approximately $\frac{5}{16}$" in width.

While I have illustrated and described preferred embodiments of my invention, many modifications may be made without departing from the spirit of the invention and I do not wish to be limited to the precise details set forth but desire to avail myself of all changes within the scope of the appended claims.

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

1. In a collapsible safety razor structure, the combination of a tubular housing having one open end with a closure plug adapted to be secured in said open end, said closure plug forming a part of a handle extending into said tubular housing, said handle having a transversely extending bore, a razor head assembly having a shank for attachment to said handle, said shank extending into said transversely extending bore with the major axis of the head assembly extending longitudinally of the handle, and resilient means for gripping said shank and holding the parts in the last mentioned position, said shank having a head at its end, said resilient means comprising a resilient finger for engaging underneath said head.

2. In a collapsible safety razor structure, the combination of a tubular housing having one open end with a closure plug adapted to be secured in said open end, said closure plug forming a part of a handle extending into said tubular housing, said handle having a transversely extending bore, a razor head assembly having a shank for attachment to said handle, said shank extending into said transversely extending bore with the major axis of the head assembly extending longitudinally of the handle, and resilient means for gripping said shank and holding the parts in the last mentioned position, said resilient means comprising a spring collar arranged in said transverse bore and having an inwardly extending resilient finger for engaging said shank.

3. In a collapsible safety razor structure, the combination of a tubular housing having one open end with a closure plug adapted to be secured in said open end, said closure plug forming a part of a handle extending into said tubular housing, said handle having a transversely extending bore, a razor head assembly having a shank for attachment to said handle, said shank extending into said transversely extending bore with the major axis of the head assembly extending longitudinally of the handle, and resilient means for gripping said shank and holding the parts in the last mentioned position, said resilient means comprising a spring collar arranged in said transverse bore and having an inwardly extending resilient finger for engaging said shank, said spring collar having a laterally projecting retaining lug engaging in a longitudinally extending bore communicating with said transverse bore to retain said collar in place.

4. In a collapsible safety razor structure, the combination of a tubular housing having one open end with a closure plug adapted to be secured in said open end, said closure plug forming a part of a handle extending into said tubular housing, said handle having a transversely extending bore, a razor head assembly having a shank for attachment to said handle, said shank extending into said transversely extending bore with the major axis of the head assembly extending longitudinally of the handle, and resilient means for gripping said shank and holding the parts in the last mentioned position, said razor head assembly having lug means extending parallel to said shank for engaging said handle and preventing rotation between said head assembly and said handle.

5. In a safety razor assembly the combination of a tubular housing having an open end with a closure for said end, said closure carrying a razor handle, said handle having a longitudinally extending bore and a transversely extending bore, said transversely extending bore having a resilient collar located in said transversely extending bore and engaging the walls of said longitudinally extending bore, and a razor head assembly comprising a clamping member, a blade and a guard member, said clamping member having a threaded shank provided with a head and having a pair of parallel lugs, said lugs passing through said blade and said guard and said shank being secured in said transversely extending bore by engagement of said resilient collar with said head.

6. In a safety razor assembly the combination of a tubular housing having an open end with a closure for said end, said closure carrying a razor handle, said handle having a longitudinally extending bore and a transversely extending bore, said transversely extending bore having a resilient collar located in said transversely extending bore and engaging the walls of said longitudinally extending bore, and a razor head assembly comprising a clamping member, a blade and a guard member, said clamping member having a threaded shank provided with a head and having a pair of parallel lugs, said lugs passing through said blade and said guard and said shank being secured in said transversely extending bore by engagement of said resilient collar with said head, said transversely extending bore communicating with a slot at one end and said resilient collar having a pair of inwardly projecting resilient fingers located in said slot for engaging beneath said head.

7. In a safety razor assembly the combination of a tubular housing having an open end with a closure for said end, said closure carrying a razor handle, said handle having a longitudinally extending bore and a transversely extending bore, said transversely extending bore having a resilient collar located in said transversely extending bore and engaging the walls of said longitudinally extending bore, and a razor head assembly comprising a clamping member, a blade and a guard member, said clamping member having a threaded shank provided with a head and having a pair of parallel lugs, said lugs passing through said blade and said guard and said shank being secured in said transversely extending bore by engagement of said resilient collar with said head, said parallel lugs being extended beyond said guard and being located to engage the side of said handle when said shank is in said transverse bore.

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