June 6, 1933. M. H. PAGE 1,912,720

SAFETY RAZOR

Original Filed May 4, 1931

Fig. 1.

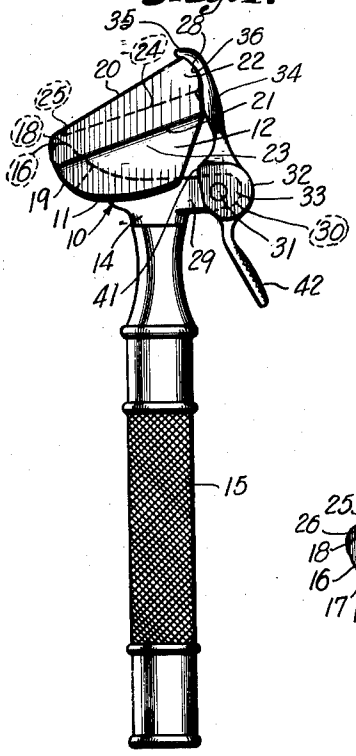


Fig. 2.

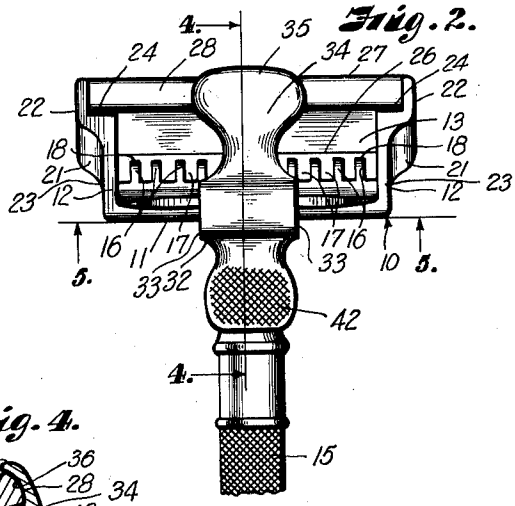


Fig. 4.

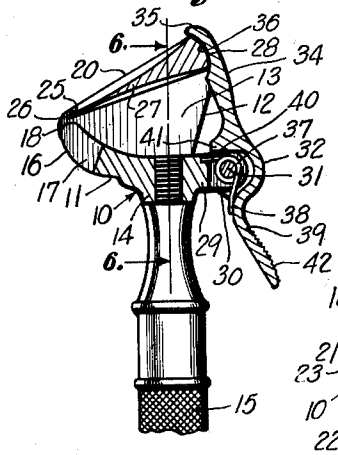


Fig. 5.

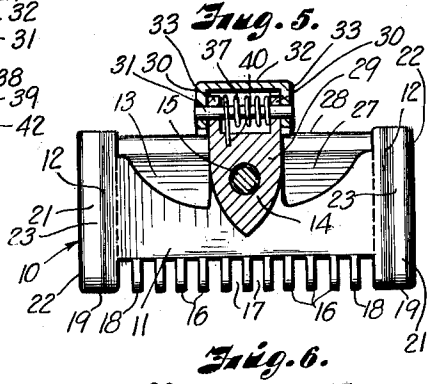


Fig. 3.

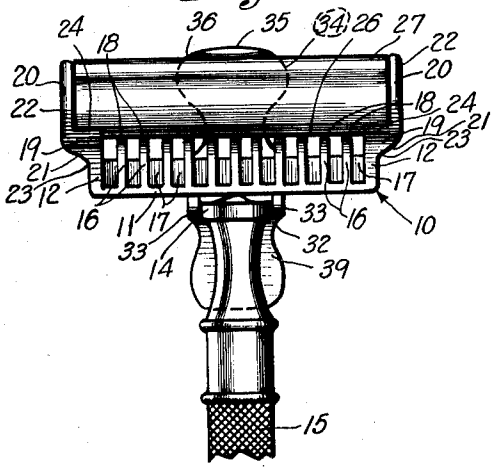
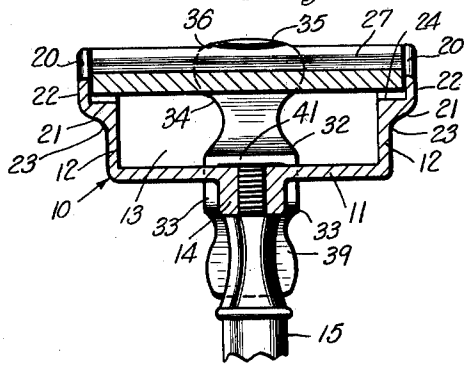


Fig. 6.



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MARSHALL H. PAGE, OF KANSAS CITY, MISSOURI

SAFETY RAZOR

Application filed May 4, 1931, Serial No. 534,841. Renewed August 19, 1932.

My invention relates to safety razors, and more particularly to a new and improved frame or blade holder for a safety razor.

It is a purpose of my invention to provide a safety razor that is so constructed that the removable blade may be readily inserted and removed therefrom with the removal of the blade being accomplished without touching the same with the hands. The razor is particularly adapted for use with a blade that is of a permanent character and that is not of the thin wafer type, but of the hollow ground type with a thin forward cutting edge and a thick rigid rear edge portion.

It is a further purpose of my invention to provide a safety razor that has a blade holder or frame that is so constructed that the blade is in clamping engagement with the frame only at three points, and so that the frame is widely spaced from the blade everywhere except along the side edges thereof and the forward cutting edge of the blade, thus preventing the clogging of the space between the frame and the blade or under the blade with soap or other shaving application, which clogs the ordinary razor and interferes with the proper cutting action thereof. In order to further avoid any such clogging, I have provided a razor in which the guard portion is made up of deep, widely spaced teeth.

It is another object of my invention to provide a safety razor of the above mentioned character in which the corners of the blade on the cutting edge are protected so as to prevent accidental cutting of the face by these corners.

It is a very important purpose of my invention to provide new and improved means for holding the blade in cutting position and for releasing the blade for removal from the razor, said means comprising a mounting for the blade, including wide longitudinal ledges on a pair of side flanges on the frame and undercut stops at the forward ends of said flanges adjacent the guard means, whereby the blade is adapted to rest on said ledges and engage said stop members, said stop members also serving to protect the corners of the blade in the manner referred to above, and a spring pressed lever, which urges the blade toward the stop members and downwardly against the ledges. Said lever is elongated and is mounted pivotally on the frame near the handle, and has a hook-like end portion that engages the rear edge of the blade and partially around the top of the blade at said rear edge to exert a forward and downward pressure on the blade toward the stop members.

It is a further purpose of my invention to provide simple and easily operable means for actuating the lever to release the blade, or to permit insertion of the blade into position to be moved into cutting position by said lever, said means comprising a finger piece on the lever for rotating the same against the action of the spring, and preferably comprising an extension directed in an opposite direction relative to the pivot from the blade engaging portion of the lever so as to lie near the handle portion of the razor.

Other objects and advantages of my invention will appear as the description of the drawing proceeds. I desire to have it understood, however, that I do not intend to limit myself by the particular details shown or described, except as defined in the claims.

In the drawing:

Fig. 1 is a side elevation of my improved razor.

Fig. 2 is a rear end elevation thereof, the handle being partly broken away.

Fig. 3 is a front end elevation thereof with the handle partially broken away.

Fig. 4 is a section taken on the line 4—4 of Fig. 2.

Fig. 5 is a section taken on the line 5—5 of Fig. 2, and

Fig. 6 is a section taken on the line 6—6 of Fig. 4.

Referring in detail to the drawing, my improved razor comprises a frame 10, having a transverse web portion 11, and a pair of side flanges 12, between which is located a wide, deep recess 13. The transverse web portion 11 is provided with a boss 14, in which the handle member 15 is a screw-threadedly se-

cured, said handle member being made of tubing, as is customary.

The transverse web portion 11 of the frame extends forwardly from the handle at an oblique angle, and terminates in the obliquely extending guard teeth 16, said teeth being widely spaced apart, as will be evident from Figs. 2, 3 and 5, and being provided with deep slots 17 between the same, said slots being much deeper than the distance between the adjacent teeth and the thickness of the teeth from front to back, to provide deep spaces between the teeth, the spaces between the teeth being much greater than the thickness of the teeth themselves, which provides for easy passage between said guard teeth of soap or other shaving application that may be used for shaving purposes, which otherwise would clog the spaces between the teeth. The forward ends of the teeth 16 are rounded, as at 18, on a gradual curvature, and the forward edges thereof conform substantially to the curvature of the forward edge portions 19 of the side flanges 12. The side flanges 12 have the upper edges 20 thereof inclined toward the web portion 11, from the rear ends thereof toward the forward ends thereof, and each is provided with a wide flat ledge 21, extending lengthwise of said flange 12, and also extending at an oblique angle to the web portion 11, which is slightly less than the angularity of the top edges 20 of the flanges.

In order to reduce the amount of material in the side flanges 12, the same are offset above the ledges 21, to provide the flange portions 22 extending above said ledges and the undercut portion 23 below said ledges. Said side flanges are further provided with a pair of lips 24 extending toward each other inwardly from the flanged portions 22 at the forward ends of the ledges 21 to provide stop members, said lip portions having a beveled edge 25 on the rear side thereof, to thus provide an undercut stop flange on the rear side of the stop member 24 for engagement by the thinned cutting edge 26 of the relatively heavy hollow ground blade 27, having the thickened rear edge 28.

The cutting edge 26 of the blade 27 rests in the undercut grooves in the stop members 24 on opposite sides thereof, protecting said corners so as to prevent accidental cutting of the face by means of said corners of the blade. The edge 26 of the blade will then lie slightly above and substantially in alignment with the uppermost part of the curved portion 18 of the teeth, forming the guard means on the razor, but not in engagement therewith, thus serving to prevent accidental cutting with the blade, but permitting the entire blade from one stop 24 to the other stop 24 to exert its cutting action on the hair, and provides a small space under the edge of the blade through which the soap and hair that has been cut off will pass between the same and into the wide deep recess 13, underlying the blade 27, and between said blade and the web portion 11 of the frame.

Means is provided for holding the blade in operative position, that is, in engagement with the stops 24 on the ledges 21, said means being so constructed that it will permit readily inserting the blade in position, and also providing for the quick and easy removal of the blade without touching the same with the hands. In order to accomplish this the flanges have the upper end portions 22 thereof extending straight upwardly in substantially parallel relation, and substantially perpendicular to the ledges 21, whereby the blade may be laid into position between the flange portions 22 on the ledges 21, when the blade clamping means is moved out of operative position, said blade being entirely free and exposed over its entire area above the ledges 21, except at the rear edge thereof at one point where the clamping means engages the same, and except for the corners of the cutting edge that are engaged under the undercut flanges 25 on the stops 24, thus providing an unobstructed free space above the blade between the rear and forward edges thereof, and between the flanges 22.

The clamping means comprises a lever, which is pivoted on the frame, a rearwardly extending bracket portion 29 being provided on the frame, which has the pivot ears 30 thereon, through which a pivot pin 31 extends for pivotally mounting the lever 32 on said frame, said lever 32 having a pair of side flanges 33 extending around the ears 30, and through which the pivot pin 31 passes. Said lever comprises an upwardly extending elongated arm 34, which is slightly curved, as will be evident from Figs. 1 and 4, and which may be reduced between the ends thereof to provide an improved appearance for the same and to reduce the amount of material therein.

The extreme upper end portion of the arm 34 of the lever is curved forwardly to provide a hook shaped end portion 35 thereon, said lever being slightly channeled transversely below the extreme end thereof, as shown at 36, to conform substantially to the shape of the rear edge 28 of the blade 27. The lever 32 is provided with resilient means tending to urge the arm 34 toward the blade 27, said resilient means in the arrangement shown, comprising a coil spring 37 wound around the pivot pin 31, and having one end 38 thereof engaging the inner face of the downwardly extending portion 39 of the lever 32, and having the other end 40 thereof seated in an opening in the bracket 29, the spring being so formed as to exert a strong tension, tending to rotate

the lever in a counter-clockwise direction, as viewed in Figs. 1 and 4.

The lever 32 is provided with a forwardly extending stop shoulder 41 between the ears 33, engaging the upper side of the bracket 29 to limit the movement of the lever in a clamping direction, this stop shoulder being of such form and extending forwardly such a distance that it will engage the upper face of the bracket 29 when the arm 34 of the lever has moved only a slight distance past the normal position thereof in clamping engagement with the blade 27, thus making it necessary to move the lever only a small amount about its pivot to move the same from its position of rest when no blade is in the razor, to a point such that the blade can be dropped into position between the flanges 22 onto the ledges 21.

This can be very readily done when the lever is retracted by application of the thumb or finger to the knurled finger piece 42 provided on the depending arm 39 of the lever 32, and no particular care is necessary in applying the blade to the razor, as it cannot drop between the ledges 21 even at one end thereof unless it is inserted with extreme carelessness, due to the width of said ledges 21. With the blade in position on said ledges with the razor either held in the position shown in Fig. 1, or with the same in any position that the flanges incline downwardly toward the stops 24, the blade will have the tendency to slide downwardly on the ledges 21 toward said stops and the lever 32 when released will aid such movement due to the formation thereof at its upper end portion and the location of the rear edge of the blade 28, slightly back of the pivot member 31, which will tend to move the blade downwardly along the ledges and force the same into engagement with the ledges 21 by the pressure of said lever on the rear edge thereof and along the top rear corner thereof. The action of the lever will be, principally, in a direction, from the lip 35 thereon toward the stops 24, which will prevent any tilting of the blade on the ledges 21, and provide a true sliding motion of the same along said ledges.

By providing an open free space above the ledges 21, between the flange portions 22, the blade can be very easily and quickly removed from the frame without touching the same with the fingers, this being very desirable, as the fingers are frequently cut in attempting to remove a wet and soapy blade from a razor frame. In order to do this, the finger piece 42 is pressed toward the handle 15 to release the blade 27, and the razor is held in such a position that the lever 34 is downwardly, or in other words, it is tilted so that the rear part of the blade is downward, which will cause the blade to slide out from under the undercut flanges 25 on the stops 24 so as to release the same, whereupon the blade will drop out from between the flange portions 22, and it will be disengaged entirely from the frame, dropping out of the same on whatever surface may be under the razor at the time the blade is released. In order to prevent injury to the blade, it is of course, advisable to drop the blade on a towel or similar soft member to prevent nicking of the cutting edge.

The spring 37 is made very strong so that a considerable pressure has to be exerted on the finger piece to move the lever to blade releasing position, thus preventing accidental disengagement of the blade by accidental engagement with the finger piece while the razor is in use.

What I claim is:—

1. In a safety razor, a blade holding frame having a channelled body portion providing a pair of side flanges with a deep, wide, unobstructed recess therebetween, and a transverse web portion, a handle extending from said web portion, said side flanges having blade supporting ledges thereon spaced below the top edges of said flanges, said frame having a plurality of guard teeth projecting from the forward edge of said web portion obliquely toward the forward ends of said ledges, a blade supported on said ledges, stops on said side flanges limiting the forward movement of said blade, a lever pivotally mounted on said frame and embracing the rear edge of said blade, resilient means urging said lever into engagement with said blade and urging said blade toward said stops and a finger piece on said lever for moving the same out of engagement with said blade.

2. In a safety razor, a blade holding frame having a channelled body portion providing a pair of side flanges with a deep, wide, unobstructed recess therebetween, and a transverse web portion, a handle extending from said web portion, said side flanges having blade supporting ledges thereon spaced below the top edges of said flanges, said frame having a plurality of guard teeth projecting from the forward edge of said web portion obliquely toward the forward ends of said ledges, a blade supported on said ledges, stops on said side flanges at the forward ends of said ledges engaging the opposite forward corners of said blade and limiting the forward movement of said blade, a lever pivotally mounted on said frame and embracing the rear edge of said blade, resilient means urging said lever into engagement with said blade and urging said blade toward said stops and a finger piece on said lever for moving the same out of engagement with said blade, said frame being open and unobstructed both above and below said blade, said blade contacting only said stops, said ledges and said lever.

3. In a safety razor, a blade holding frame having a channelled body portion providing a pair of side flanges with a deep, wide, unobstructed recess therebetween, and a transverse web portion, a handle extending from said web portion, said side flanges having blade supporting ledges thereon spaced below the top edges of said flanges, said frame having a plurality of guard teeth projecting from the forward edge of said web portion obliquely toward the forward ends of said ledges, a blade supported on said ledges, undercut stops on said side flanges at the forward ends of said ledges engaging the opposite forward corners of said blade and limiting the forward movement of said blade, a lever pivotally mounted on said frame and engaging the rear edge of said blade said lever having its blade engaging portion embracing said rear edge of said blade, resilient means urging said lever into engagement with said blade and urging said blade into engagement with the undercut portions of said stops and a finger piece on said lever for moving the same out of engagement with said blade.

4. In a safety razor, a frame having a transversely extending portion provided with a pair of side flanges upstanding therefrom to provide a wide, unobstructed recess in said frame, a handle extending from said transversely extending portion, wide flat blade supporting ledges on said side members extending obliquely relative to said transverse portion of said frame, said flanges having undercut stop members at the forward ends of said ledges, a blade engaging said ledges and slidable longitudinally of the same, guard teeth on the forward edge of said frame adjacent the forward edges of said side flanges, a lever pivoted on said frame adjacent said handle and having a hook-like end portion engaging around the rear edge and over the top of said blade adjacent said rear edge, a resilient member urging said lever into engagement with said blade and a finger piece on said lever for moving the same against the action of said resilient means said frame being open and unobstructed between said side flanges above said ledges rearwardly of said stops whereby the upper face of said blade is entirely free and unobstructed between said side flanges from the forward to the rear edge thereof.

5. In a safety razor, a frame having a transversely extending portion provided with a pair of side flanges upstanding therefrom to provide a wide, unobstructed recess in said frame, a handle extending from said transversely extending portion, wide, flat blade supporting ledges on said side members extending obliquely relative to said transverse portion of said frame, said flanges having undercut stop members at the forward ends of said ledges, a blade engaging said ledges and slidable longitudinally of the same, guard teeth on the forward edge of said frame adjacent the forward edges of said side flanges, a lever pivoted on said frame, adjacent said handle and having a transversely channelled end portion receiving the rear edge of said blade therein, a resilient member urging said lever into engagement with said blade to urge said blade longitudinally of said ledges toward said stop members, and a finger piece on said lever for moving the same against the action of said resilient means said frame being open and unobstructed between said side flanges above said ledges rearwardly of said stops whereby, the upper face of said blade is entirely free and unobstructed between said side flanges from the forward to the rear edge thereof, and said blade is free to drop out of said frame upon release of said lever from the blade and tilting of said frame.

6. In a safety razor, a frame having a transversely extending portion provided with a pair of side flanges upstanding therefrom to provide a deep, unobstructed recess in said frame, a handle extending from said transversely extending portion, wide, flat blade supporting ledges on said side members extending obliquely relative to said transverse portion of said frame, said flanges having undercut stop members at the forward ends of said ledges, a blade engaging said ledges and slidable longitudinally of the same, deep, widely spaced guard teeth on the forward edge of said frame adjacent the forward edges of said side flanges, a lever pivoted on said frame adjacent said handle and having a curved end portion engaging the rear edge of said blade and the top thereof adjacent said rear edge end and, a resilient member urging said lever into engagement with said blade said frame being open and unobstructed between said side flanges above said ledges rearwardly of said stops whereby the upper face of said blade is entirely free and unobstructed between said side flanges from the forward to the rear edge thereof, said frame having only said transversely extending portion between said side flanges which is spaced a substantial distance from said blade rearwardly of said guard teeth when said blade is in operative position, whereby clogging of said razor with soap is prevented.

7. In a safety razor, a frame having a transversely extending portion provided with a pair of side flanges upstanding therefrom to provide a wide, deep recess in said frame, a handle extending from said transversely extending portion, wide, flat blade supporting ledges on said side members extending obliquely relative to said transverse

portion of said frame, said flanges having undercut stop members at the forward ends of said ledges, a blade engaging said ledges and slidable longitudinally of the same, guard teeth on the forward edge of said frame adjacent the forward edges of said side flanges, said frame having a rearwardly extending bracket thereon adjacent said handle, a lever pivoted on said bracket, one end of said lever having a hook-flanged end embracing the rear edge of said blade centrally and the other end of said lever forming a finger piece adjacent said handle, a resilient member urging said lever into engagement with the rear edge of said blade to urge said blade along said guide ledges toward said stop members said blade being otherwise free, whereby said blade is engaged at three spaced points to hold the same in position on said ledges.

8. In a safety razor, a frame having a transversely extending portion provided with a pair of side flanges upstanding therefrom to provide a deep, unobstructed recess in said frame, a handle extending from said transversely extending portion, wide, flat blade supporting ledges on said side members extending obliquely relative to said transverse portion of said frame, said flanges having undercut stop members at the forward ends of said ledges, a blade engaging said ledges and slidable longitudinally of the same, deep, widely spaced guard teeth on the forward edge of said frame adjacent the forward edges of said side flanges, a lever pivoted on said frame adjacent said handle and having a curved end portion embracing the rear edge of said blade, a resilient member urging said lever into engagement with said blade, a finger piece on said lever for moving the same against the action of said resilient means said frame being open and unobstructed between said side flanges above said ledges rearwardly of said stops whereby the upper face of said blade is entirely free and unobstructed between said side flanges from the forward to the rear edge thereof to facilitate assembly and disassembly of said blade and frame, said frame being spaced a substantial distance from said blade rearwardly of said guard teeth when said blade is in operative position, whereby clogging of said razor with soap is prevented, and stop means on said lever engaging said frame to limit the movement of said lever toward the forward edge of said frame at a point a short distance beyond its blade clamping position.

In testimony whereof, I hereunto subscribe my name this 30 day of April, 1931.

MARSHALL H. PAGE.