

J. H. PACE.
SAFETY RAZOR.
APPLICATION FILED MAY 13, 1910.

991,533.

Patented May 9, 1911.

Fig. 1.

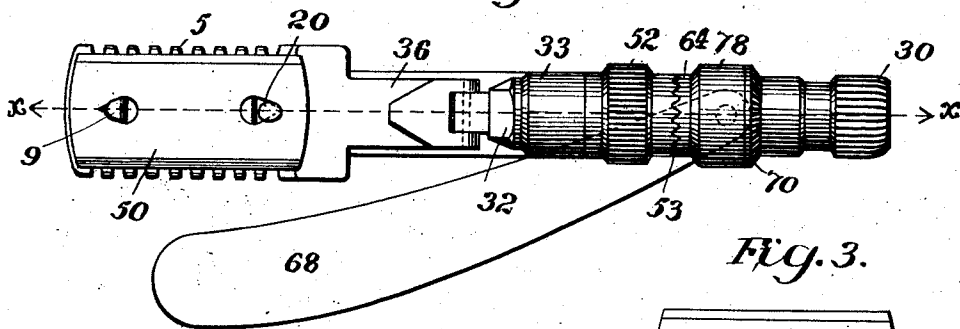


Fig. 3.

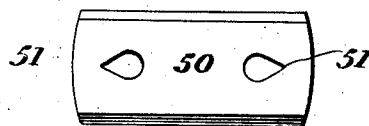


Fig. 2.

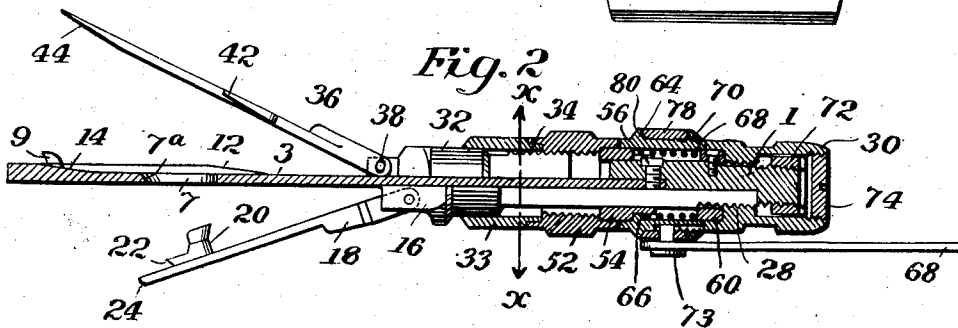


Fig. 4.

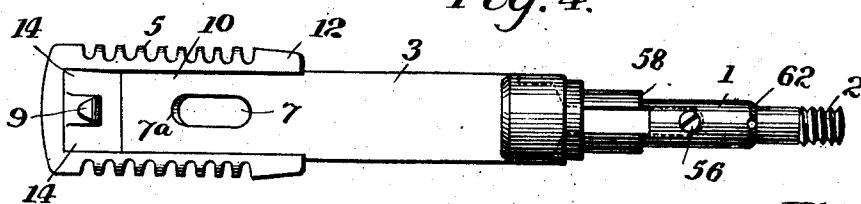


Fig. 5.

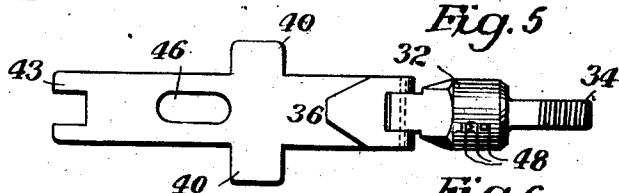
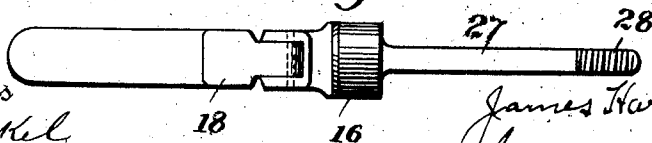


Fig. 7.



Fig. 6.



Witnesses
J. P. Roberts
A. P. Roberts.

Inventor
James Harrison Pace
by G. J. Mason, Attorney.

UNITED STATES PATENT OFFICE.

JAMES HARALSON PACE, OF HARTWELL, GEORGIA.

SAFETY-RAZOR.

991,533.

Specification of Letters Patent.

Patented May 9, 1911.

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To all whom it may concern:

Be it known that I, JAMES HARALSON PACE, a citizen of the United States, residing at Hartwell, in the county of Hart and State of Georgia, have invented certain new and useful Improvements in Safety-Razors, of which the following is a specification.

This invention relates to safety razors, and more particularly to safety razors employing a thin, but rigid and comparatively unyielding, blade.

An important feature of the invention consists in the provision of improved means for detachably locking the blade in position on its holder, whereby it may be applied to and removed from the holder in a very efficient manner.

Another feature of the invention consists in providing improved means for adjusting the distances of the blade from its guard in order to control the depth of cut or, in other words, to secure a comparatively light, or a deep shave. In connection with this feature of the invention, the adjusting means for the blade is so constructed and arranged that when once set for any given depth of cut, the blade may be removed from its holder and another blade applied thereto without affecting such adjustment.

In the preferred construction the amount of adjustment of the blade is determined with reference to certain marks carried by a movable part of the razor which has connection with the blade-adjusting means.

With these and other important objects in view, the invention consists in the construction and combinations of parts which will be hereinafter more fully described, and claimed.

In the drawings: Figure 1 represents a plan view of a safety razor embodying the present invention. Fig. 2 is a view at right angles to Fig. 1, illustrating certain parts of the razor in section on the line $x-x$ Fig. 1, and other parts in elevation, the blade-elevating leaf and blade-locking leaf being shown in open positions. Fig. 3 is a plan view of the blade. Fig. 4 is a detail view, illustrating in plan the main portion of the handle, and the guard. Fig. 5 is a detail view illustrating in plan the blade-elevating leaf and its carrier. Fig. 6 is a similar view

illustrating an obverse plan view of the blade-locking leaf and its carrier. Fig. 7 is a transverse section on the line $x-x$, 55 Fig. 2.

The main handle portion 1 is shown as having rigidly secured thereto a thin, plate-like holder 3, said parts being connected preferably by a screw 56. The plate 3 has at its forward edges teeth 5, constituting the comb or guard for the blade. The plate or holder 3 is also formed with an elongated slot 7, having a forward beveled edge 7^a. Near the extreme forward end of the holder 3 is a hook 9, and upon opposite sides thereof the central portion of the plate is formed with a recess or depression 10, the side walls of the depression being herein shown as formed by inner edges of the comb 5. The rearward extremities of the holder in line with the comb parts, are formed on a downward bevel, 12, and the central portion of the recess at its forward end is formed as an upwardly sloping bevel 14. 70

A rigid ring 33 is connected with the plate or holder 3, and sliding therein is a semi-cylindrical hub 32 having a rearwardly projecting shank 34 provided with a mutilated, preferably left-hand, screw-thread. The shank 34 is arranged to slide in a suitable guide-way on the plate 3. A lug projecting from the inclined end of the hub 32 is perforated to receive a pivot pin to hingedly connect therewith the plate-elevating leaf 36, the aperture 38 in the lug through which the pivot pin passes being, as shown in Fig. 2, vertically elongated to permit vertical play of the leaf. The leaf 36 is shown as having oppositely projecting wings 40, a centrally elongated slot 46 which is arranged to register with the slot 7 in the plate 3, and forwardly projecting branches 43. The lower surface of the wings 40 are formed on a bevel to cooperate with the bevels 12 of the plate 3, and the lower surfaces of the branches 43 are formed on a similar bevel to cooperate with the beveled surface 14 on opposite sides of the lug 9, on said plate 3. 90

Arranged immediately below the plate 3, and sliding in a semi-cylindrical space formed between said plate and the ring 33, is a hub 16, having a rearwardly projecting 100

shank 27 whose extremity is shown as being provided with a preferably left-hand mutilated thread 28. The shank 27 slides in the handle similarly to the shank 34. The forward portion of the hub 16 is shown as being forked to embrace a rearwardly extending lug on the blade-locking leaf 18, said lug and forks being pivotally connected by a pin, as shown. The locking leaf 18 has an upwardly projecting lug 20, which is formed with a rearward hook-shaped or inclined terminal, and the forward portion of the lug 20 has a beveled or inclined portion 22 to cooperate with the inclined forward end of the slot 7^a in the plate 3, heretofore described.

An internally threaded ferrule 30, having a milled or roughened exterior, as shown, fits over the end of the handle shank 1, and is provided with an internal thread to engage the mutilated thread 28 on the shank 27, as shown in Fig. 2. The ferrule 30 is retained on the handle shank by a nut 72, which engages an external thread 2 on the shank 1, and fits against a shoulder formed upon the interior of the ferrule 30. The ferrule is preferably provided with an internal thread at its extreme rear end, which may receive an externally threaded cap-nut, 74, in order to make a neat finish and entirely cover the parts inclosed within said ferrule. With this construction, it will be seen that, when the leaves 36 and 18 are folded against the plate or holder 3 and a razor blade, 50, having therein the perforations 51, is placed upon the holder so that said perforations will pass over the lug 9 of the holder and the lug 20 of the leaf 18, upon rotation of the ferrule 30 to the left, the locking-leaf and its lug will be carried rearwardly to engage the contracted portion of the aperture in the blade entered by said hook, and will lock the blade firmly in place on the holder, as shown in Fig. 1.

The handle-shank 1 is provided with a shoulder 58, and a shouldered ferrule 54 is placed thereon, secured in position by the screw 56, heretofore described. A ferrule 52, which is preferably milled externally, as shown in Fig. 1, is rotatably retained between a shoulder on the ring 33 and the forward end of the ferrule 54. The ferrule 52 has an internal thread which meshes with the thread 34 on the shank of the blade-elevating leaf 36, and said ferrule is furthermore provided at its inner end with locking teeth 53. An adjusting and locking ferrule 64 is rotatably mounted upon the handle shank between the ferrules 52 and 30, and is provided at its outer end with teeth shaped to engage the teeth 53 on the ferrule 52. The ferrule 64 has an internal shoulder 66, and is also provided with an opening or slot through said shoulder to receive the head of the screw 56. A coil spring 68 surrounds the shank 1, and

is held compressed between the ring 60 and the shoulder 66 on the ferrule 64, the normal tendency of said spring being to urge this ferrule forward so that its teeth are in locking engagement with the teeth 53 on the ferrule 52, whereby to prevent rotation of the latter.

Rotation of the ferrule 52 to the right advances the blade-elevating leaf 36 to cause its inclined portions 44 and 42 to ride upon the cooperating inclines 14 and 12, on the holder 3, to elevate the blade varying distances from said holder; a reverse rotation of the ferrule 52 serves to withdraw the leaf 36, permitting it to descend along the inclines and the blade to move in closer proximity to its holder. Under the former adjustment, the blade is positioned for a deep shave, and under the latter adjustment for a light shave, as will be obvious. In order to determine the position of the blade-elevating leaf, the hub 32 may be provided with a series of lines, as indicated at 48, opposite which the letters "L", "M" and "D" may be placed, to indicate "Light", "Medium" and "Deep", if so desired. In the position that the parts occupy in Fig. 1, it will be seen that the teeth of the ferrule 52 are engaged by the teeth of the locking ferrule 64, which hold the blade in any predetermined position of adjustment. In order to release the ferrule 52 and change the adjustment, it is necessary to rotate the ferrule 30 to the right, which advances the leaf 18 until the inclined end 22 of the lug 20 engages the inclined forward edge 7^a of the slot 7, which results in forcing the ferrule 30 to the rear until its internal shoulder contacts with the forward end of ferrule 72, at which point the ferrule 30 will have moved back a sufficient distance to permit rearward movement of the locking ferrule 64. The ferrule 64 is then moved back, compressing the spring 68 and disengaging the teeth of the ferrule 64 from the teeth 53 of the ferrule 52. After the adjustment has been effected, the ferrule 64 is released and the spring reacts and forces its teeth into locking engagement with the teeth 53, thereby retaining the adjustment of the parts until the ferrule 52 is again rotated.

Preferably, an extension handle 68 is secured to a ring 78, which surrounds the ferrule 64, and has a beveled shoulder to engage a shoulder 80 on said ferrule. A rivet 73 securing the handle 68 to the ring 78, has its inner end projecting within a longitudinal groove formed exteriorly of the ferrule 64, and said ring is retained on the ferrule by an externally milled locking ring 70, which has internal threads to engage the external threads upon the rear portion of the ferrule, as shown in Fig. 2. The handle 68 is, by the means described, pivotally connected with its ring 78, and may be moved to position to be grasped by the hand, as an extension

from the main handle-portion of the razor (see Fig. 2) or may be moved forwardly and folded flat against the razor (see Fig. 1).

It will be noted that the blade is rigid, as contradistinguished from those safety razors which employ a flexible or bendable blade, and that said blade is provided with two edges; if desired, however, the blade may have only a single edge.

I do not limit myself to the details of construction herein shown and described, which are merely illustrative of the invention, but reserve the right to embody the invention in other forms which fall within the scope of my claims.

What I claim as new and desire to secure by Letters Patent, is:

1. A safety razor having, in combination, a handle, a blade holder provided with a guard and a hook rigid therewith, a movable blade-retaining leaf having a hook, a blade provided with apertures registering with said hooks, and means for effecting opposite movements of said leaf for locking and unlocking the blade.

2. A safety razor having, in combination, a handle member, a holder provided with a guard, a rigid hook on said holder, a slidable hub mounted for movement in said handle, a leaf pivotally connected with said hub and carrying a locking hook, a blade having apertures to register with said hooks, and means for effecting opposite movements of said hub.

3. A safety razor having, in combination, a handle, a holder attached to the handle and having a guard, a hook projecting from said holder, a hub sliding within the handle and having a rearwardly projecting shank provided with a threaded portion, a leaf hinged to said hub and having a locking hook thereon, and a ferrule rotatably carried by said handle and provided with a thread to mesh with the thread on said shank.

4. A safety razor having, in combination, a handle, a holder carried thereby, a guard comprising teeth projecting from opposite sides of the holder, a double edged blade supported upon said guard, means for causing bodily movement of the blade relatively to the guard to adjust the depth of cut, actuating means therefor, and locking devices for securing the blade to the holder.

5. A safety razor having, in combination, a handle, a blade holder carried thereby provided with inclines, a guard on said holder, a blade-elevating leaf having inclines to cooperate with those on the holder, means for moving the leaf in opposite directions to adjust the distance of the blade from its guard, and means for locking the blade in adjusted position.

6. A safety razor having, in combination, a handle, a blade holder carried thereby, a guard comprising spaced, toothed members

to provide therebetween a recess, said guard and holder being respectively provided with inclined surfaces, a blade-elevating leaf having cooperating inclined surfaces, a razor blade, means for effecting opposite movements of the leaf and locking means to retain the blade on its holder.

7. A safety razor having, in combination, a handle, a holder having a depressed portion terminating in an inclined surface, a guard located upon opposite sides of said depressed portion, said guard having inclined portions, a blade-elevating leaf fitting within the depressed portion of the holder and having inclined surfaces cooperating with the inclined portions of the holder and guard, a razor blade, means for adjusting the blade-elevating leaf to effect variations in the depth of cut, and means for locking the leaf in adjusted position.

8. A safety razor having, in combination, a handle, a holder provided with a depression and a guard, said parts having inclined surfaces thereon, a blade-elevating leaf fitting said depression and having inclined surfaces cooperating with those on the holder and guard, a hub sliding in said handle, pivotal means connecting said hub and leaf, a threaded shank projecting from said hub, a ferrule mounted for rotation on the handle and having internal threads engaging the threads on said shank, said ferrule having teeth, a second ferrule rotatably mounted upon the handle and having teeth engaging the teeth of the first named ferrule, and yielding means for moving the last named ferrule into locking engagement with the first named ferrule.

9. A safety razor having, in combination, a handle, a holder provided with a depression and a guard, said parts having inclined surfaces thereon, a blade-elevating leaf fitting said depression and having inclined surfaces cooperating with those on the holder and guard, a hub sliding in said handle, pivotal means connecting said hub and leaf, a threaded shank projecting from said hub, a ferrule mounted for rotation on the handle and having internal threads engaging the threads on said shank, said ferrule having teeth, a second ferrule rotatably mounted upon the handle and having teeth engaging the teeth of the first named ferrule, yielding means for moving the last named ferrule into locking engagement with the first named ferrule, and a device for controlling the longitudinal movements of the last named ferrule.

10. A safety razor having, in combination, a handle, a holder carried by said handle having a depression, a guard located upon opposite sides of said depression, a hub slidable in the handle and carrying a blade-elevating leaf to fit said depression, means whereby said leaf is elevated or depressed

when the hub is advanced or retracted, and indicating means between said hub and handle for determining the position of adjustment of the blade.

11. A safety razor having, in combination, a handle, a holder carried thereby, having a depression and a slot in said depression, a hook at the forward end of said holder, a guard arranged upon opposite sides of said depression, a blade-elevating leaf in said depression, a hub sliding in said holder, a leaf pivotally carried by said hub and having a hook registering with said slot, a razor blade having perforations to receive said hooks, and means to effect opposite movements of the hub and leaf for locking and unlocking said blade.

12. A safety razor having, in combination, a handle, a holder provided with a slot having a forwardly beveled end carried by said handle, a guard on said holder, a blade-elevating leaf fitting said holder, means for adjusting said leaf including a rotatable ferrule, a hub fitting said handle, a locking-leaf hinged to said hub provided with a hook registering with said slot and a forwardly inclined portion cooperating with the inclined portion of the slot, means for reciprocating said hub and leaf including a rotatable ferrule, a blade having perforations registering with said hooks, and a longitudinally movable locking ferrule for the blade-elevating leaf, said parts being so constructed and arranged that when the locking-leaf is moved in a direction to lock the blade to its holder the blade-elevating leaf is retained in adjusted position, and when the locking-leaf is moved to release the blade the inclined portions on said leaf and holder engage and the elevating leaf-locking ferrule may be moved longitudinally to permit adjustments of said leaf.

13. A safety razor having, in combination, a handle, a holder thereon, a blade, a blade-elevating leaf, means for adjusting said leaf to move the blade different distances from its holder, and means for locking the blade in position constructed and arranged to control the operation of the blade-elevating leaf-adjusting means.

14. A safety razor having, in combination, a handle, a holder carried thereby, a blade, a blade-elevating leaf, means for adjusting said leaf, means for locking the adjusting means, and means for securing the blade to its holder constructed and arranged to control the movement of said locking means.

15. A safety razor having, in combination, a handle having a ferrule provided with a beveled annular shoulder, a holder carried by the handle, a blade on said holder, a detachable ring fitting said ferrule and having a beveled portion to engage said shoulder, a supplemental handle pivoted to

said ring and arranged to be folded against the main handle, and a ring having threaded engagement with the ferrule for securing said ring in detachable engagement with the beveled shoulder.

16. A safety razor having, in combination, a handle, a holder and guard carried thereby, a hook on said holder, a member sliding in said handle, a leaf pivoted to said member and carrying a hook, and a blade having apertures registering with said hooks.

17. A safety razor having, in combination, a handle, a holder provided with a slot carried by said handle, a hook on the holder, a guard also carried by the holder, a member sliding in said handle, a leaf pivoted to said member and carrying a hook to enter said slot, a blade having apertures registering with said hooks, and means to effect sliding movements of said leaf and its carrying member.

18. A safety razor having, in combination, a handle, a holder and guard carried thereby, a pivoted blade-elevating leaf in sliding engagement with said handle, a pivoted blade-locking leaf in sliding engagement with said handle, and means for effecting movement of said leaves.

19. A safety razor having, in combination, a handle, a holder and guard carried thereby, a pivoted blade-elevating leaf in sliding engagement with said handle, a pivoted blade-locking leaf in sliding engagement with said handle, locking means for the elevating leaf, and controlling means for the locking leaf arranged to release said locking means.

20. A safety razor having, in combination, a blade holder having a guard thereon and a rigid hook, a hinged blade-retaining leaf having a hook, a blade provided with apertures registering with said hooks, and means for effecting relative separating movements of said hooks to lock the blade to its holder.

21. A safety razor having, in combination, a handle, a holder carried thereby, a guard on said holder, a blade, means for bodily elevating or depressing the blade relatively to the guard for adjusting the depth of cut, actuating means cooperating therewith and devices independent of said means for locking the blade in adjusted position.

22. A safety razor having, in combination, a handle, a holder provided with a guard and a hook, a hinged locking leaf in sliding engagement with the handle and having a hook, a blade provided with apertures registering with said hooks, and means for moving said leaf to separate the hooks and thereby lock the blade to its holder.

23. A safety razor having, in combination, a handle, a holder provided with a

guard and a hook, a blade-elevating leaf
means for moving said leaf in said holder to
effect adjustments of the blade relatively
to the guard, a locking leaf having a hook,
5 means for moving said leaf, and a blade pro-
vided with apertures registering with said
hooks.

In testimony whereof I affix my signature
in presence of two witnesses.

JAMES HARALSON PACE.

Witnesses:

O. S. KELLEY,

J. G. THORNTON.