

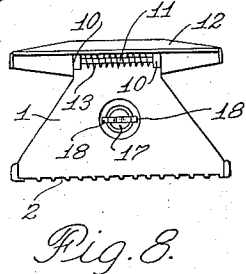
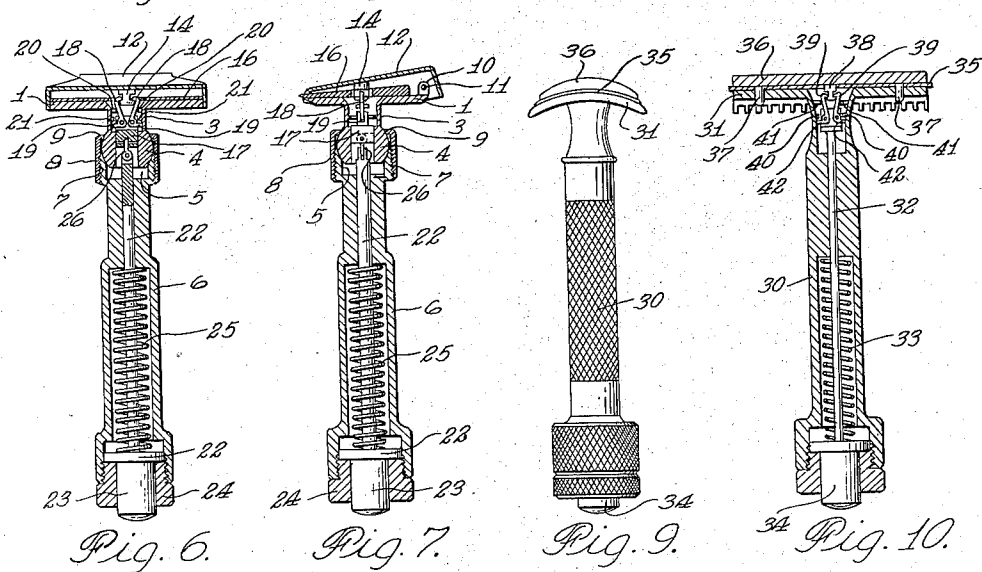
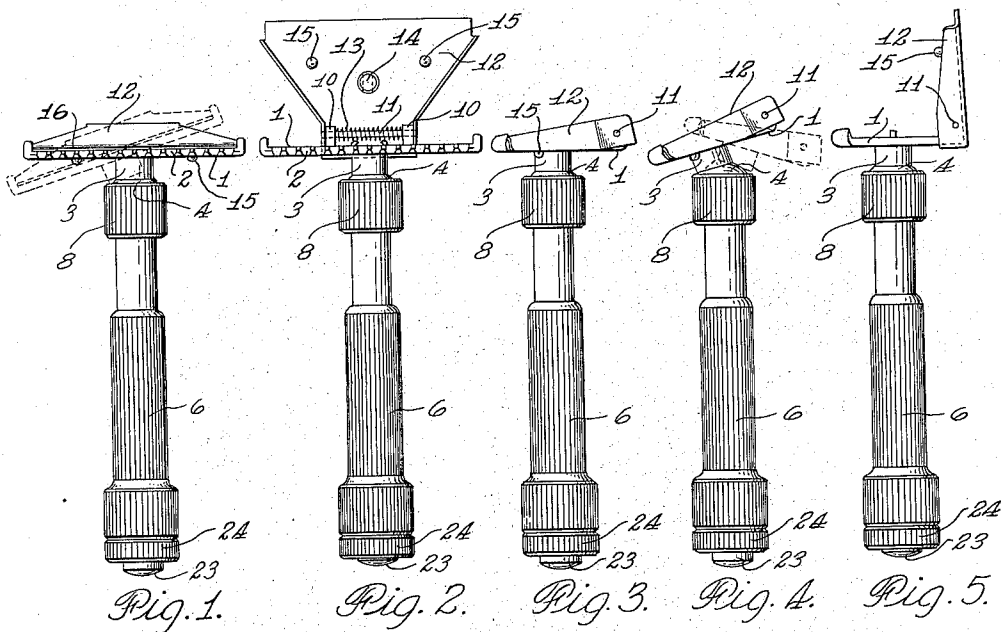
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SAFETY RAZOR

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SAFETY RAZOR

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6 Claims. (Cl. 30-12)

The present invention pertains to a novel razor of the type including a removable blade and a guard member associated therewith and commonly known as a safety razor.

15 The primary object of the present invention is to provide a razor having elements for receiving and clamping a blade thereon, the clamping elements being quickly releasable for the purpose of removing or replacing the blade. The razor includes a head for receiving the blade, a clamping plate for holding the blade on the head, and means for holding the clamping plate in its blade clamping position, the latter means being arranged in a handle supporting the head so that it becomes unnecessary for a person removing a blade to place fingers on the head or clamping plate near the blade and thus danger of receiving cuts while removing a blade is eliminated.

20 Another object of the present invention is to provide a razor having a hinged clamping plate mounted on a blade receiving head which is supported upon a handle, and in combination therewith a securing means for clamping plate operable through the handle. The hinged cover plate has resilient means for automatically moving it to an open position when the securing means therefor has been released and therefore in order to discard a used blade it is only necessary that the operator push a plunger conveniently mounted in the handle and the blade will fall from the supporting head into a suitable receptacle.

35 Another object of the present invention is to provide a razor having an adjustable blade supporting head. That is to say the head is universally adjustable to various angular positions relative to its supporting handle so that the razor may be readily adapted for efficiently operating over various curved surfaces.

40 With the above and other ends in view the invention consists in matters hereinafter set forth and more particularly pointed out in the appended claims, reference being had to the accompanying drawing, in which

45 Figure 1 is a front elevation;
Fig. 2 is a front elevation illustrating the blade clamping plate in its open position;
Figs. 3 and 4 are side elevations;
50 Fig. 5 is a side elevation illustrating the blade clamping plate in its open position;
Figs. 6 and 7 are longitudinal cross sections;
Fig. 8 is a top plan view;
Fig. 9 is a side elevation of a modified form of razor, and

55 Fig. 10 is a horizontal cross section thereof. Like characters of reference are employed throughout to designate corresponding parts.

60 With reference to Figs. 1 to 8 the numeral 1 designates a tapered blade supporting head

formed at its broader forward edge with the well known type of razor guard 2. Projecting from the lower surface of the head 1, is a tubular member 3 having a substantially spherical portion 4 at its lower end. The tubular portion 4 seats on the upper hollow end 5 of a handle 6 having a screw threaded portion 7 receiving one end of an internally threaded sleeve 8. The upper end of the sleeve 8 is formed as at 9 to engage the spherical portion 4 and thus there is provided a ball and socket type of universal joint between the head 1 and the handle and by tightening the sleeve 8 sufficient friction may be provided to hold the head in any angular position desired. Various angular positions of the head relative to the handle have been shown and may be readily observed upon reference to Figs. 1, 3 and 4 of the drawing and in this manner the head may be angularly adjusted to suit the wishes of any user.

20 Extending upwardly from the top surface of the head 1 are a pair of spaced ears 10, the latter being positioned remote from the forward guide edge 2. A pivot pin 11 is supported in the ears 10 and mounted on the pivot pin is a clamping plate 12. Thus the clamping plate 12 is mounted to pivot relative to the head 1 and a spring 13 is sleeved on the pivot pin with one end engaging the head 1 and its other end engaging the clamping plate 12 and normally urging the latter to pivot towards the positions shown in Figs. 2, 5 and 8.

35 Secured to the under face of the clamping plate 12 is a grooved stud 14 so positioned that it is in alignment with and projects slightly into the tubular member 3 when the clamping plate is positioned as shown in Fig. 7. As is common in safety razors with removable blades there are also provided pins 15 on the clamping plate that serve in the well known manner in indexing the blade relative to the supporting head. The blade is designated by the numeral 16 and although it is not shown in the drawing it will be understood that the pins 15 extend through apertures in the blade and through apertures in the supporting head 1.

40 Slidably disposed in the spherical portion 4 is a block 17 having a pair of pivotally mounted grasping fingers 18 mounted on the top thereof, the latter being formed with levers 19 extending radially relative to the block 17. The grasping fingers 18 are disposed within the tubular member 3 and the latter is formed with two pairs of abutments, there being a pair of abutments 20 and 21 adjacent to each finger 18. The abutments 20 and 21 are spaced above the levers 19 on the respective fingers 18 and are spaced one from the other.

50 Slidably mounted in the handle 6 is a plunger 60

22 having a finger piece 23 extending through a plug nut 24 received in the lower end of the handle 6. A coiled spring 25 is sleeved around the plunger 22 and normally urges the latter towards the position illustrated in Figs. 6 and 7. The upper end of the plunger 22 is connected to the slidable block 17 by a universal joint 26.

In describing the operation reference will be had more particularly to Fig. 6. Let it be assumed that manual pressure is placed on the finger piece 23 tending to compress the spring 25 and move the plunger 22 upwardly relative to the handle 6. Such movement of the plunger imparts sliding motion to the block 17 and the latter carries the fingers 18 upwardly so that the levers 19 strike the abutments 21. Continued upward movement of the block 17 with the levers 19 in engagement with the abutments 21 causes pivotal movement of the fingers 18 so that the latter spread apart at their upper ends and are thus moved out of their grasping engagement with the grooves in the stud 14. In this manner the clamping plate is released and the energy stored in the spring 13 urges the clamping plate to its open position. At this time the blade 16 may be lifted off the head 1 or it may be dropped off by tilting the handle.

In order to replace the blade and to hold it in position for use it is again placed on top of the head 1. The finger piece is again pressed manually to spread the grasping fingers 18 and the clamping plate is then moved towards its clamping position by manual pressure. As the clamping plate is moved so that the stud 14 is again disposed projecting slightly into the tubular member 3 the manual pressure is gradually relieved from the finger piece 23 and the spring 25 causes the plunger 22 and sliding block 17 to move downwardly. As the fingers 18 are carried downwardly the levers 19 are moved out of engagement with the abutments 21 and at the same time the fingers 18 are moved into engagement with the abutments 20, the latter abutments causing inward pivotal movement of the fingers as they move downwardly. The inward pivotal movement of the fingers 18 causes the latter to engage the grooves in the stud 14 and the plunger 22 is thus connected to the clamping plate 12 so that the energy stored in the spring 25 tends to maintain the clamping plate in its blade retaining position.

In the modified form shown in Figs. 9 and 10 to which reference will now be had there is shown a razor comprising a handle 30 having a blade receiving head 31 on the top thereof. In the handle is provided a plunger 32 which is urged downwardly by a spring 33, the plunger having a finger piece 34 so that it may be moved manually. A blade 35 is received on the head 31 and a retainer plate 36, having indexing pins 37, has a grooved stud 38 extending through an aperture in the blade. Grasping fingers 39 carried on the upper end of the plunger 32 engage in the grooves of the stud and so grasp the same that the pressure of the spring 33 on the plunger holds the retainer plate 36 in its blade retaining position. Adjacent to each finger 39 are a pair of spaced abutments 40 and 41 and each finger has an integral lever portion 42.

The operation of the fingers 39 in holding the plate 36 in its blade retaining position is identical to that described above in reference to the first mentioned embodiment and accordingly it becomes obvious that the present blade retaining

means is applicable to various types of razors having stationary blade supporting heads.

Although specific embodiments of the present invention have been illustrated and described it will be understood that various changes may be made within the scope of the appended claims without departing from the spirit of the invention, and such changes are contemplated.

What I claim is:—

1. In a razor, a handle, a blade supporting head, a blade retainer plate, a universal connection between said handle and said head, and resilient manually releasable means in said handle and operative through said universal connection and engaging said plate to normally maintain the latter in a blade clamping position.

2. In a razor, a handle, a blade receiving head on said handle, a blade retainer plate, a slidable element in said handle, resilient means urging sliding movement of said element in one direction, pivoted grasping fingers mounted on said slidable element, means on said retainer plate adapted to be engaged by said grasping fingers, and means in said handle for engagement by said fingers to cause pivotal movement of said fingers when said slidable element is manually moved in opposition to said resilient means.

3. In a razor, a handle, a blade receiving head on said handle, a blade retainer plate, a hinge securing said retainer plate to said head, resilient means for urging hinging movement of said retainer plate in a direction away from said head, releasable means in said handle for engaging said retainer plate, and resilient means of greater strength than said first named resilient means and acting upon said releasable means to hold the plate against hinging movement as a result of the urge of said first named means.

4. In a razor, a handle, a blade supporting head, a blade retainer plate, a hollow universal connection between said head and said handle, a slidable element in said head, pivoted grasping fingers mounted on said slidable element and adapted to engage said retainer plate, means mounted in said head for engagement by said fingers to cause pivotal movement thereof upon movement of said slidable element in one direction, a spring pressed manually movable plunger in said handle, and a universal connection between said slidable element and said plunger and disposed within said first named hollow universal joint.

5. In a razor, a handle, a blade supporting head, a blade retainer plate, a hinge securing said retainer plate on said head, resilient means urging hinging movement of said retainer plate away from said head, a universal connection between said handle and said head, and resilient manually releasable means in said handle and operative through said universal connection and engaging said plate to hold the same against movement as a result of the urge of said first named resilient means.

6. In a razor, a handle, a blade supporting head, a blade retainer plate, a hollow universal joint connecting said handle to said head, releasable engaging means mounted in said head for engagement with said retainer plate, a spring pressed plunger in said handle, and a universal connection between said plunger and said releasable engaging means, the last mentioned universal connection being disposed within said hollow universal connection.

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