

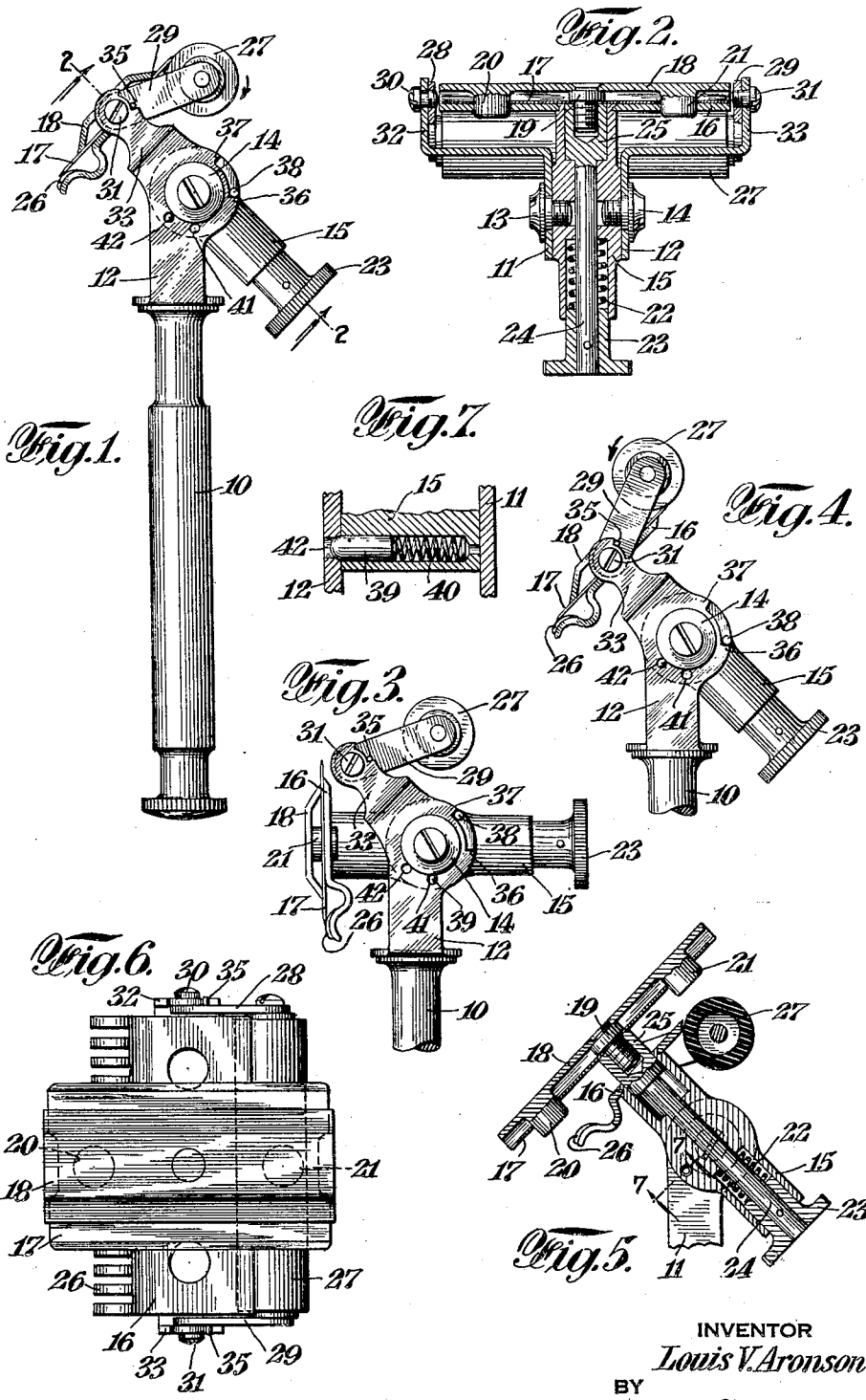
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COMBINED SAFETY RAZOR AND SHARPENING DEVICE

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COMBINED SAFETY RAZOR AND SHARPENING DEVICE

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This invention relates to a combined safety razor and sharpening device.

Among the objects of this invention is the provision of improved means carried on the razor for facilitating sharpening of each edge of a safety razor blade without requiring removal of the blade from the holder.

In the example of the invention here illustrated and described, a support for the razor blade is provided and pivoted relatively to the handle. This form of the device also is provided with a pivotally mounted sharpening roller, its pivot support being rigid with the handle. A reversal of this construction, in which the razor blade mounting is rigid with the handle and in which the pivot support for the sharpening roller is pivoted with respect to the handle, constitutes a possible variant construction embodying my invention. In other forms of the invention, the sharpening roller and razor blade may be slidably or otherwise movably supported on the handle. One of the objects of these arrangements for mounting the blade and sharpening roller in relatively movable positions is to provide simple and durable means whereby the sharpening device may be brought into active engagement with either face of the blade edge to be sharpened and whereby in the event a double edged blade is used, the sharpening roller may be brought into engagement with either face of either of the two edges preferably while one of the edges is in shaving position.

Other objects of the invention will appear from the following description taken in connection with the drawing, in which

Fig. 1 is a side view of the combined safety razor and sharpening device with the parts in position for shaving;

Fig. 2 is a cross sectional view taken substantially along the line 2—2 of Fig. 1;

Fig. 3 shows the razor blade in a pivoted position permitting movement of the sharpening device into position for cooperation with either face of an edge of the blade;

Fig. 4 shows the sharpening device in cooperative relation with the forward face of an edge of the razor blade;

Fig. 5 shows the razor blade moved outwardly from the guard supporting head and

turned through an angle of 90° as in the operation of turning the razor edge for edge, or in exposing the blade and other parts for washing;

Fig. 6 is a view looking down on the parts as shown in Fig. 5; and

Fig. 7 is an enlarged sectional view taken along the line 7—7 of Fig. 5.

As shown in Fig. 1, a handle 10 may be provided of any suitable construction, the forward end of which is forked providing ears 11 and 12 constituting journal bearings for screws 13 and 14 threaded into a hollow stem 15, on the outer end of which is carried a guard supporting member 16 whose outer face may be flat, as shown, and on which rests the razor blade 17, the blade being held in contact therewith by an outer clamping cap 18 which is provided with a screw threaded stud 19 bearing against the outer face of the razor blade, and with the usual alining studs 20 and 21 passing through holes in the razor blade and in the guard supporting member 16.

The clamping cap 18 is drawn inwardly into the position shown in Figs. 1, 2, 3 and 4, by a spring 22 which bears against an interior shoulder on the stem 15 and against the inner end of a knurled finger piece 23 carried on a plunger 24 whose outer end is enlarged as at 25 and interiorly threaded to cooperate with the screw on the stud 19. By turning the knurled finger piece 23 and the plunger 24 clockwise the razor blade may be securely clamped between the inner face of the shoulder on the stud 19 and the outer end of the enlarged portion 25 of the plunger 24. By a counterclockwise movement of the finger piece 23, the clamping cap may be disconnected from the plunger 24 after which the razor blade may be removed for the purpose of replacing it by a new blade.

The construction described permits the ready removal of the razor blade from the guard supporting member and the clamping cap, and permits the razor blade and outer clamping cap to be moved outwardly with respect to the guard supporting member into the position shown in Figs. 5

and 6, in which the alining studs 20 and 21 are disengaged from the guard supporting member 16 thereby permitting the razor blade to be turned about the axis of the plunger 24, to reverse the edges of the razor blade with respect to guard fingers on the guard supporting member 16, and the sharpening device 27. One or more of the guard fingers 26 at the ends of the blade may be higher than the remaining fingers and in line with the outer face of the blade supporting member 16 in order to space the edge of the blade from the remaining fingers.

The sharpening device 27 may comprise a roller of any suitable design and formed of sharpening material such as a plastic composition mixed with a granular or powdered abradant substance. In operating the sharpening roller, it is rolled over the user's hand or any other available surface and is thereby pressed against the blade edge with more or less force depending on the desired degree of abrading action. Usually the roller is turned in directions as indicated by the arrows in Figs. 1 and 4, i. e., in directions such that the roller surfaces contacting with the blade, move away from, rather than toward, the edge being sharpened. However, with sharpening rollers of fine hard compositions, the roller may be turned in either direction to secure the desired sharpening or honing action.

This roller is preferably supported on arms 28 and 29 into which are threaded screws 30 and 31 which may be journaled in ears 32 and 33 constituting extensions of the ears 11 and 12, as shown more clearly in Fig. 2. The arms 28 and 29 are preferably provided with limiting pins 35 which cooperate with shoulders on the ears 32 and 33 to limit the movement of the roller in the positions indicated in Figs. 1 and 4. In Fig. 1, the roller is in position to cooperate with the rear face of one edge of the razor blade, while in Fig. 4, the roller is in position to cooperate with the forward face of the blade edge.

In order that the roller may be shifted from either of the positions shown in Figs. 1 and 4 to the other position the stem 15, before referred to, is pivotally mounted on the handle 10 by means of the pivoting studs 13 and 14 before described. The ears 11 and 12 are preferably provided with limiting shoulders 36 and 37 which in cooperation with a stud 38 on the stem 15 limit the movement of the razor blade in the position shown in Figs. 1 and 4, and the position shown in Fig. 3. When the stem 15 and razor blade are in the position shown in Figs. 1 and 4, the razor blade will be in proper angular position with respect to the handle 10 for shaving operations. The roller is preferably, however, in the position shown in Fig. 1 during shaving operations so as not to interfere.

In this position also the roller and the safety razor blade are in a position to hone or strop the rear face of the adjacent edge of the safety razor blade. In the position shown in Fig. 4, the roller is in a position to hone or strop the forward face of the adjacent edge of the razor blade.

In order that the stem 15 and razor blade may be removably held in the limited positions indicated in Figs. 1 and 3, the stem 15 is preferably provided with a recess housing a plunger 39 spring-pressed outwardly by a spring 40 to snap into holes 41 and 42 in the ear 12. For the purpose of permitting the stem 15 to be moved readily from one position to another by means of the knurled piece 23 the outer end of the plunger 39 is preferably rounded so that it will be cammed out of engagement with the holes 41 and 42 upon pressure being applied to the knurled piece 23 to rock the stem 15.

By means of the construction shown, a new blade may be substituted for a blade mounted in the razor by turning the knurled piece 23 counterclockwise to disengage the enlarged portion 25 of the plunger 24 from the stud 19 on the outer clamping cap or plate 18, after which the outer clamping plate may be removed to permit the removal of the razor blade. The parts as shown in Fig. 1 are in the position which they occupy when the razor is ready for a shaving operation. In this position also the sharpening roller may be rotated to hone or strop the rear face of the idle edge of the razor blade. If it is desired to hone or strop the forward face of the idle edge of the razor blade, the stem and blade are rocked into the position shown in Fig. 3, after which the roller may be moved into the position shown in Fig. 4 whereupon, after the stem and razor blade are moved back into the normal shaving position, the parts will assume the position shown in Fig. 4. After the forward face of the idle edge of the razor blade has been honed or stropped the stem is again rocked into the position shown in Fig. 3 and the roller 27 is depressed into the position shown in Fig. 3. Then the stem is rocked back and the parts will again assume the position shown in Fig. 1.

The newly sharpened edge of the razor blade may now be presented to the guard fingers by first pressing upwardly on the knurled finger piece 23 to disengage the alining studs 20 and 21 from the cooperating holes in the guard supporting member 16, as shown in Figs. 5 and 6, after which the blade may be readily rotated by a turning movement of the finger piece 23 in either direction until the newly sharpened edge is in proper alinement with respect to the guard, whereupon the finger piece may be released and the spring 22 will draw the blade and cap piece 18 into the positions as of Fig. 1.

With the above described construction, the

razor blade, when in normal shaving position, is positioned at a convenient angle in respect to the handle for efficient shaving. This angle may be varied somewhat to suit the requirements of different users by varying the position of the aperture 42. As above pointed out, the sharpening roller may be positioned below the blade during shaving so that despite the fact that the sharpening device is carried by the razor at all times, it interferes in no way with the proper use of the device in shaving. Furthermore, with the roller thus positioned beneath the blade, the user may by the manipulation of the finger piece 23, either quickly raise the blade to the position shown in Fig. 5 for washing the razor parts or he may quickly remove the cap piece 18 for renewal of the blade. The razor parts are also readily exposed for washing by movement of the blade support into the position shown in Fig. 3. Thus, when the user is about to shift the roller to the upper face of the blade, he may take advantage of the exposed condition of the blade by then washing the parts.

The above described construction is also particularly desirable in that during all times when the blade is being shifted from one position to another, the user may grasp the handle 10 in one hand and the finger piece 23 in the other hand, thereby securely holding the razor so that it will not slip from the hands with liability of cutting the user. In order to tilt the sharpening roller either from its upper to its lower position or vice versa, while the blade is in the position shown in Fig. 3, the head of the razor may be tilted either up or down so that the roller will drop to the desired position by gravity. Hence at all times when the razor blade edges are exposed during this operation, the user may keep his two hands on the handle 10 and finger piece 23 respectively, thus obviating any necessity for bringing the hands into proximity of the blade. Of course with the parts in the position shown in Fig. 1, both of the blade edges are fully protected.

While the invention has been described in detail with respect to certain preferred examples thereof which give satisfactory results, it will be understood by those skilled in the art after understanding the invention, that various changes and modifications may be made without departing from the spirit and scope of the invention and it is intended therefore in the appended claims to cover all such changes and modifications.

What I claim is:

1. In a combined safety razor and sharpening device, a handle, razor blade supporting means pivoted on said handle for bodily transverse movement of the blade, and a sharpening device pivoted on said handle for movement into position to cooperate with

either face of an edge of a razor blade supported by said supporting means.

2. In a combined safety razor and sharpening device, a handle, razor blade supporting means pivoted on said handle for bodily transverse movement of the blade, a sharpening device pivoted on said handle for movement into position to cooperate with either face of an edge of a razor blade supported by said supporting means, and means limiting the pivoting movement of the razor blade supporting means and the supporting means for the sharpening device.

3. In a combined safety razor and sharpening device, a handle, a sharpening device, means supporting the sharpening device for movement into position to cooperate with either face of an edge of a razor blade, and means supporting a razor blade for movement from and toward said sharpening device substantially in a direction transversely and in the plane of said blade.

4. In a combined safety razor and sharpening device, a handle, a sharpening device, means supporting the sharpening device for movement into position to cooperate with either face of an edge of a razor blade, means supporting a razor blade for movement from and toward said sharpening device substantially in a direction transversely and in the plane of said blade, and means limiting the movement of each of said supporting means.

5. In a combined safety razor and sharpening device, a handle, a sharpening device, means supporting the sharpening device for movement into position to cooperate with either face of an edge of a razor blade, means supporting a razor blade for movement from and toward said sharpening device substantially in a direction transversely and in the plane of said blade, means limiting the movement of each of said supporting means, and means for yieldingly holding said razor blade supporting means in either of its positions.

6. In a combined safety razor and sharpening device, a handle, a pair of spaced bearing ears on the forward end of said handle extending in the direction of the length of said handle, a second pair of spaced ears extending at an angle to said handle, a sharpening device, arms pivotally supporting said sharpening device on said second pair of spaced ears, and a razor blade supporting stem pivoted on said first pair of ears, the construction being such as to facilitate the movement of the blade and sharpening device into cooperative relation to hone or strop either face of an edge of a razor blade supported on said supporting stem and the movement of the razor blade into proper angular relation with the handle for shaving operations.

7. In a combined safety razor and sharpening device, a handle, a razor blade supporting means movably mounted on said handle,

and a sharpening device movably mounted on said handle, one of said means providing for relative movement of said sharpening device and blade supporting means substantially in the plane of the blade from an engaging to a disengaging position, and the other of said means providing for relative movement of said sharpening device and said blade supporting means from a position in which one face of the blade on said supporting means engages one side of said sharpening device to a position in which the other face of said blade engages the other side of said sharpening device.

8. In a combined safety razor and sharpening device, a handle, a hollow stem pivoted on said handle, a support for a double-edged safety razor blade, said support being carried by said stem, a razor blade clamping means, a plunger carried by said clamping means and projecting through said stem and slidably and rotatably supported therein, and spring means urging said clamping means toward said support, said pivotal connection providing for movement of said blade into and out of shaving position, and said spring means yielding as said clamping means is moved away from said support into a position in which said blade may be rotated to present either edge into shaving position.

9. In a combined safety razor and sharpening device, a handle, a hollow stem pivoted on said handle, a support for a double-edged razor blade, said support being carried by said stem, a razor blade clamping means, a plunger carried by said clamping means and projecting through said stem and slidably and rotatably supported therein, spring means urging said clamping means toward said support, said pivotal connection providing for movement of said blade into and out of shaving position and said spring means providing for movement of said clamping means away from said support into a position in which said blade may be rotated to present either edge into shaving position, a sharpening device, and a mounting therefor providing for movement of said sharpening device into position for cooperation with either face of an edge of the razor blade as the razor blade support is moved about its pivot to move the razor blade toward said sharpening device.

10. In a combined safety razor and sharpening device, the combination of a handle, razor blade supporting means movably connected to said handle providing for movement of said blade substantially in a direction in its own plane at right angles to its edge, a sharpening device, and means for supporting said sharpening device on said handle for movement in a direction substantially at right angles to the blade to provide for movement of said sharpening device from

one side of said blade to the other when said blade is moved out of sharpening position.

11. In a combined safety razor and sharpening device, the combination of a handle, a razor blade support pivotally mounted on said handle and adapted in one of its positions to support a razor blade at an angle with respect to the handle for shaving operations and adapted to be moved to a greater angle with respect to the handle, a sharpening roller, a support for said roller pivotally mounted on said handle and adapted in its normal position to support the roller in engagement with the rear face of the blade on said blade supporting means when said blade support presents the blade in shaving position and adapted to be swung to the upper side of said blade when said blade is moved to a greater angle with respect to said handle.

12. In a combined safety razor and sharpening device, a handle, a razor blade supporting means pivoted on said handle, a sharpening roller, and a support for said roller hingedly mounted on said handle for movement from a position in which it may engage one face of a blade carried by said supporting means into a position in which it may engage the other face of a blade carried by said supporting means.

13. In a combined safety razor and sharpening device, the combination of a handle, razor blade supporting means comprising a guard, movably mounted on said handle and adapted in one of its positions to present a razor blade carried thereby in proper angular position with respect to said handle for shaving operations, a sharpening roller, and means movably supporting said sharpening roller on said handle in engagement with the rear edge of a of a razor blade in shaving position, said means providing for movement of said roller into cooperative position with respect to the forward face of said edge when the razor blade is moved out of shaving position.

14. In a combined safety razor and sharpening device, a handle, a razor head pivoted on said handle, a guard on one side of said head, means for holding a double edged razor blade in position on said head with one of its edges in cooperative relation to said guard, means for supporting said holding means slidably and rotatably on said head, a sharpening device, and means limiting the movement of said head to position said razor blade in and out of position for shaving and sharpening.

In testimony whereof I have signed my name to this specification.

LOUIS V. ARONSON.