Nov. 24, 1925. 1,562,896

W. H. LISH

COMBINED SAFETY RAZOR AND STROPPER

Original Filed July 10, 1922

Fig. 1.

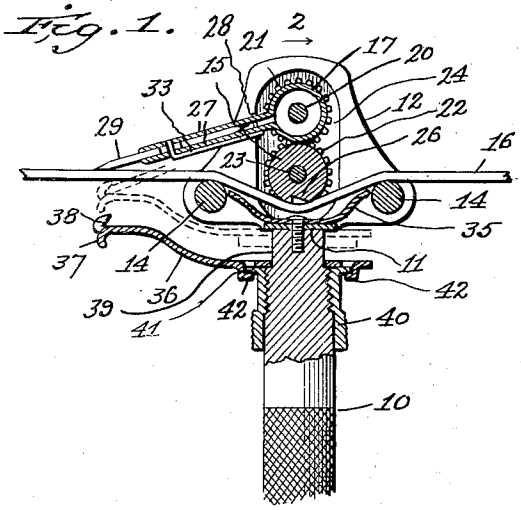


Fig. 2.

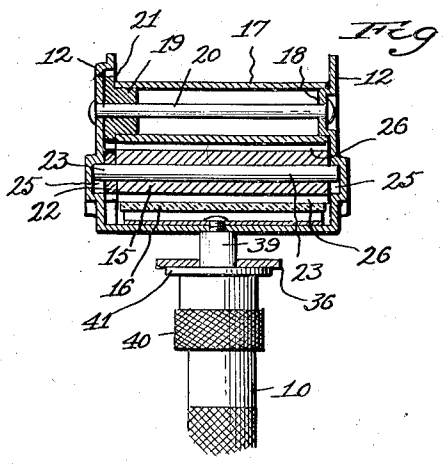


Fig. 3.

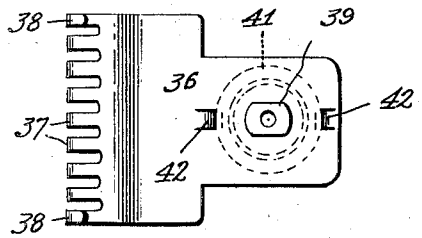


Fig. 4.

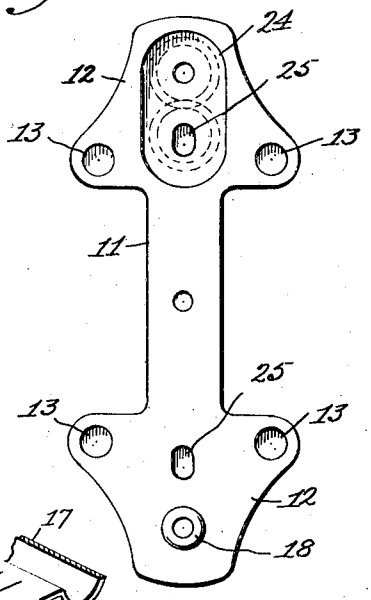


Fig. 5.

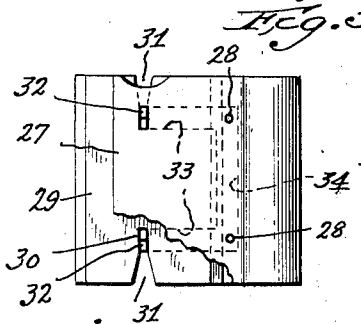


Fig. 8.

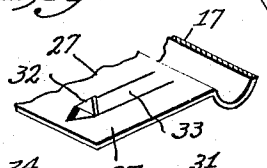


Fig. 6.

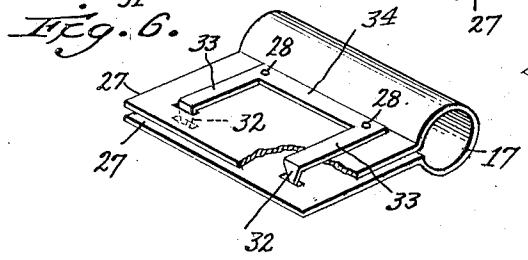
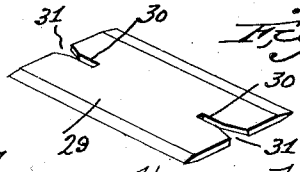


Fig. 7.



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Patented Nov. 24, 1925. 1,562,896

UNITED STATES PATENT OFFICE.

WILLIAM H. LISH, OF YORK, PENNSYLVANIA.

COMBINED SAFETY RAZOR AND STROPPER.

Application filed July 10, 1922, Serial No. 574,025. Renewed May 4, 1925.

To all whom it may concern:

Be it known that I, WILLIAM H. LISH, a citizen of the United States of America, and a resident of York, county of York, and State of Pennsylvania, have invented certain new and useful Improvements in Combined Safety Razors and Stroppers, of which the following is a full and clear specification.

This invention has relation to that type of combined razor and stropper in which the blade is released from the guard and allowed to remain in the same holder during the stropping operation, the stropper being on the order of the well-known oscillating-blade type, as more fully hereinafter set forth.

In the drawing—

Fig. 1 is a vertical sectional view of my device adjusted for use as a stropper;

Fig. 2 is a vertical sectional view taken at right-angles to Fig. 1;

Figs. 3 to 8, inclusive, are detail views hereinafter more fully described.

Referring to the one sheet of drawing annexed, 10 is a handle attached to the upper end of which is a cross-bar 11 of a frame, the frame having upstanding side-plates 12, this frame being desirably made of a single sheet of metal, as shown in Fig. 4, which is stamped up to bring the frame-plates 12 at right-angles to the bar 11. At the bottom corners of the side-plates, outward depressions 13 are formed therein to provide sockets for the ends of rollers 14 which, together with a central roller 15, form the guide for the strop 16.

Journaled in the upper part of the frame, with its axis in the same vertical plane with the axis of roller 15, is a hollow roller 17, one end of which is journaled on an inwardly-extending boss 18 on one of the side-frames and the other end of which is journaled, through the medium of a plug 19, upon pivot-rod 20 connecting the side-plates 12 of the frame, said plug 19 being inserted tightly in the end of the hollow shaft 17 and being provided with a gear-wheel 21 which lies in an outward depression in the adjacent side-frame 12. This gear 21 is adapted to mesh with a gear 22 affixed to the shaft 23 of the under roller 15, this latter gear 22 being, like gear 21, housed in a depression 24 formed in the side-plate 12, whereby the two gears are located entirely out of the path of the strop and are protected against injury.

The ends of the shaft 23 are journaled in cup-like depressions 25 formed in the side-plates 12, these journal cups being elongated vertically so as to permit the roller 15 to have a free body movement toward and from the upper roller 17, the extent of this movement being sufficient to permit roller 15 to drop away far enough to demesh the gears when there is no pressure on the roller 14 from the strop. The roller 15 is desirably made of aluminum, to thereby avoid glazing the surface of the strop, and, to still further guard against glazing, I prefer to provide the face of this roller with one longitudinal groove 26 which will present to the face of the strop longitudinal edges which, when the roller 15 is held against rotation in the stropping action, will slightly scrape the surface of the strop. Any number of these grooves 26 may be employed; I believe that two will be ample. It will be understood that these grooves 26 will come into operation only occasionally, i. e., whenever the two gears are brought into mesh in such manner as to bring one of the grooves 26 at the under side of the roller at the time when said rollers cease to rotate and the strop is sliding under the roller. It will be understood that there need be no attempt on the part of the user to adjust the roller 15 so as to bring the scraping-edges into action, as these edges need not be brought into action every time the stropper is used, it being sufficient that they come into use a certain percentage of times in the course of use of the stropper; for instance, I believe that under the laws of chance one of these scraping grooves will come into use about on an average of once in every 24 times the stropper is operated, and I figure that that will be amply sufficient to prevent glazing the surface of the strop in view of the fact that it is obvious that glazing can be prevented by an occasional scraping or roughening of the surface of the strop.

The hollow roller 17 is provided with any suitable form of blade-holding means. In the present instance, I show a pair of sheet-metal clamping-plates 27 which are desirably formed integral with the hollow cylinder 17, these plates being connected together near their junction with the cylinder by one

or more rivets 28, the plates being, of course, resilient. The shaving-blade 29 is held between the plates 27. This blade is provided at each end with an inwardly-extending notch 30 having a V-shaped mouth 31. These slots 30—31 are adapted to engage a pair of spring-actuated lock-lugs 32 carried by one of the plates 27 and extending through registering slots in the opposite plate, these lock-lugs 32 being V-shaped. In Fig. 6 I show these lugs as being carried by spring-arms 33 riveted to the exterior of the bottom-plate 27, the V-shaped lugs 32 extending upwardly through the slots in said plates, across the space between the plates and in such position as to be engaged by the slots 30—31 in the blade when the blade is pushed endwisely into the space between the plates 27. These arms 33 are desirably connected together by a bar 34 and are secured in place by the aforesaid rivets 28. In Fig. 8 I show a slight modification; in this form, the spring-arms 33 are formed by slitting the under-plate 27. With this construction, it will be seen that when the shaving-blade is shoved end-wisely into the holder, the inner end wall of the notch 30 will strike against the beveled edge of the nearest lock-lug 32 and cam the same far enough upwardly to permit the blade to pass; then, when the notch 30 at the far end of the shaving-blade engages the lock-lug 32 at the opposite side, the previously-raised lock-lug will drop into the near slot 30 and thus lock the blade against movement in any direction while in the holder. The blade may be removed by forcibly pulling it endwisely in either direction. The stropper operates in the usual manner of the flop-over type. When the strop is inserted through the system of guide-rollers, the driving-roller 15 will have its gear 22 forced up into mesh with the companion gear 21 and then, as the stropper is pulled back and forth on the strop, the gearing will cause the blade-holder to flop from one side to the other, the driving-roller 15 being held against rotation after the edge of the blade comes against the strop, as usual. To assist in guiding the end of the strop between the guide-rollers when it is interlaced therein, I provide a dished plate 35 which is fastened on the upper side of the bar 11 and has its side edges extending outwardly and upwardly in opposite directions to points near the freely-rotatable guide-rollers 14.

I mount on the upper end of the handle, just below the frame-bar 11, a guard-plate 36 which at its outer edge is provided with the usual down-turned fingers 37, and, at the side edges of the guard-plate, with upturned hooks 38. I provide means for raising and lowering this guard-plate on the handle, and, to prevent it rotating on the handle, I make the upper end of the handle at 39 angular in cross-section and provide a similarly-shaped hole in the guard-plate, whereby the guard-plate may be freely moved up and down on the handle but will be prevented from rotating thereon. A sleeve 40 is mounted on the handle and threaded internally to engage threads on the handle, for the purpose of raising and lowering the guard-plate, an outwardly-extending annular flange 41 being provided at the upper end of the sleeve for enagaging integral depending lugs 42 on the guard-plate, lugs 42 being in the form of hooks to engage under the annular flange 41, so that the retraction of the sleeve 40 will forcibly pull the guard-plate down so as to be out of the way during the stropping operation. The parts are so proportioned that when the guard-plate is dropped down to the position shown in full lines in Fig. 1 and the strop is removed from the stropper, the edge of the blade 29 will rest on the upper face of the guard-plate at a point a short distance behind the hooks 38; then, when the guard-plate is pushed up to the position shown in dotted lines in Fig. 1, the edge of the blade 29 will slide along the upper face of the guard-plate and automatically engage behind the hooks 38 and thus lock the blade to the guard.

The stropping devices herein described and illustrated are covered by my co-pending application Serial No. 561,365.

I do not desire to be understood as limiting myself to the precise details of construction and arrangement shown, as variations and modifications therefrom may be made without departing from the spirit and scope of my invention and improvements. I therefore reserve the right to all such variations and modifications as properly fall within the scope of my invention and improvements and as set forth in the terms of the following claims.

1. In a safety razor of the oscillating-blade type, a swinging blade-holder, a frame for supporting the same, a handle connected to the frame, a guard-plate mounted on the handle and capable of sliding thereon toward and from said frame, means for causing this sliding action back and forth, said guard-plate being provided with hooks turned upwardly and inwardly to adapt them to engage and interlock with the edge of the blade in the holder and also with a supporting surface adapted to guide the edge of the blade into said hooks when the blade is pushed toward the frame into shaving position.

2. In a safety razor of the oscillating-blade type, a swinging blade-holder, a frame for supporting the same, a handle connected to the frame, a guard-plate mounted on the handle and capable of sliding thereon toward and from said frame, means for caus-

ing this sliding action back and forth, said guard-plate being provided with upturned hooks adapted to engage the edge of the blade in the holder and also with a supporting surface adapted to guide the edge of the blade into said hooks when the blade is pushed toward the frame into shaving position, said means embodying a rotatable sleeve threaded on the handle and having swivel connections with said guard-plate, a portion of the handle being angular in cross-section and held in slidable but non-rotative co-action with the handle.

In testimony whereof I hereunto affix my signature.

WILLIAM H. LISH.