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E. L. CRESPO

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SAFETY RAZOR BLADE HONING DEVICE

Filed June 15, 1926

Fig. 1.

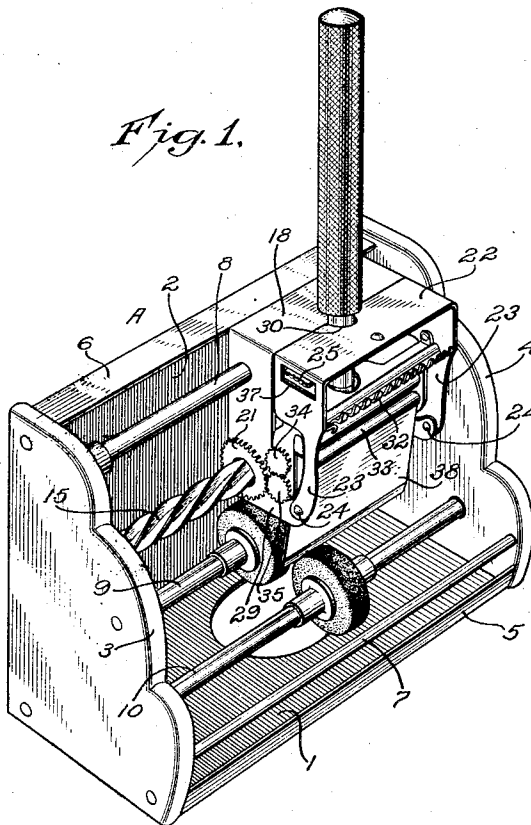


Fig. 2.

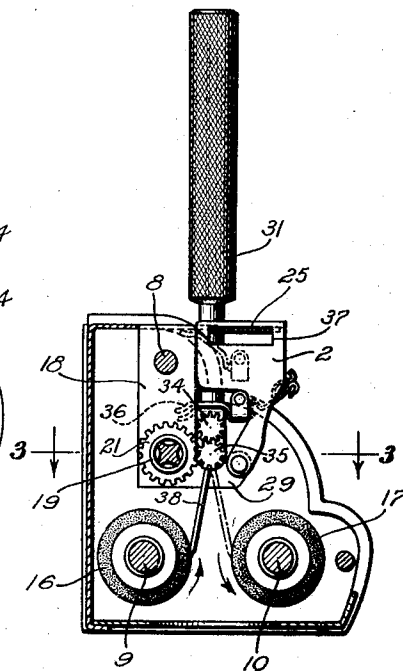


Fig. 3.

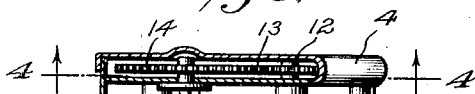


Fig. 4.

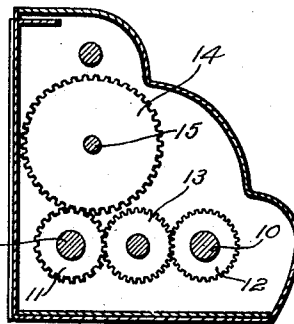


Fig. 6.

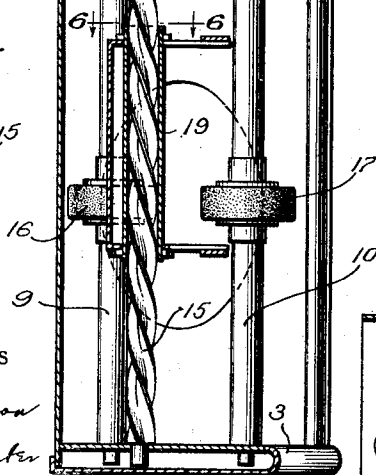
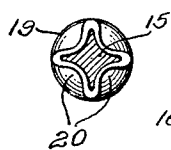
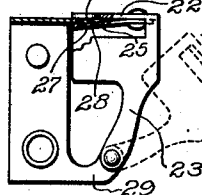


Fig. 5.



WITNESSES

E. Wilson
S. W. Porter

INVENTOR

ERNEST L. CRESPO

BY

Mum Co
ATTORNEYS

UNITED STATES PATENT OFFICE

ERNEST L. CRESPO, OF BROOKLYN, NEW YORK

SAFETY-RAZOR-BLADE-HONING DEVICE

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This invention relates to safety razor blade honing devices.

An object of the invention is to provide a neat, attractive, efficient and portable device which is small, light, and attractive in appearance, and which will function to efficiently hone the blade of a safety razor.

My improved device is especially adapted for honing the blade of a well known type of safety razor on the market, which is universally known as the Auto-Strop Safety Razor. Razors of this type are stropped without removing the blade from the razor, and with the use of my improved device, which allows such a blade to be honed from time to time, a blade will last and be efficient for a great length of time.

A further object is to provide a honing device of this character which will hone the blade without removing the blade from the razor, and which facilitates the manipulation of the razor so as to prevent possibility of cutting the hands while honing or while placing the razor in position for honing or removing the same from said position.

A further object is to provide a device of this character which will be practically fool-proof as there is only one way in which the razor can be positioned, and there are relatively few parts which are so assembled and constructed as to make the device strong and durable and not likely to get out of repair.

With these and other objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts, which will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings—

Figure 1 is a perspective view showing my improved device with the razor and blade in operative position therein;

Figure 2 is a view in transverse section through the center of the device;

Figure 3 is a view in longitudinal section on the line 3—3 of Figure 2;

Figure 4 is a view in section on the line 4—4 of Figure 3;

Figure 5 is a view in section through the blade supporting frame;

Figure 6 is a fragmentary view in section on the line 6—6 of Figure 3.

While of course it is to be understood that my improved device may be held in any position, I shall for convenience of description describe the device in the position illustrated, referring to certain parts as "vertical" and "horizontal".

A represents the casing of my improved device which comprises a bottom 1, a vertical rear wall 2, and hollow end walls 3 and 4. The base 1 at its front edge has an upwardly projecting flange 5, and the back wall 2 has a horizontal forwardly projecting flange 6 at its upper end. These walls may be secured together in any approved manner so as to provide a rigid construction, and I preferably provide a strengthening rod 7 which connects the end walls adjacent the front of the device, and I also provide a guide rod 8 connecting the end walls adjacent the upper and rear portion of the casing.

9 and 10 represent parallel shafts which are mounted in the end walls and which have secured thereon, within the hollow wall 4, gear wheels 11 and 12, respectively, with an idler gear 13 between them and meshing with both of said gears 11 and 12. Also I provide within the hollow wall 4 a relatively large gear wheel 14 which is secured to one end of a screw shaft or worm 15. This screw shaft or worm 15 extends longitudinally of the casing and is mounted in both end walls thereof.

Aligned circular hones or grinding wheels 16 and 17 are fixed to the shafts 9 and 10 intermediate the ends of said shafts and midway the ends of the casing. 18 represents a reciprocating frame which is mounted to reciprocate on the rod 8, and its lower portion supports a sleeve 19 which has a frictional bearing in the frame and receives the screw or worm 15. Some portion of this sleeve 19 is made to operatively engage the worm or screw and I have illustrated for this purpose inwardly projecting lugs 20 at one end of the sleeve so that when the sleeve is held the worm is turned as the frame is reciprocated to turn the gears 14, 11, 13 and 12, as will be readily understood. A gear wheel 21 is fixed to the

sleeve 19 at one end of the frame 18 for a purpose which will hereinafter appear.

The frame 18 supports a pivoted bracket 22 which has depending arms 23 at opposite ends pivotally connected to horizontal extensions 29 at the lower end of the frame 18, as shown at 24, so as to permit the bracket 22 to swing toward and away from the frame.

The upper portion of the bracket 22 when in closed position is in alinement with the top of the frame 18 and is held in this position by spring catches 25 located at both ends of the bracket and engaging under a ledge 26 at the top of the frame. This ledge 26 is depressed so as to form lugs 27 which enter openings 28 in the spring tongues 25 when the bracket 22 is moved to operative position and hold the bracket in this position.

The upper portions of the bracket 22 and frame 18 are formed with semicircular recesses 30 to accommodate the handle 31 of the safety razor of the type above set forth. This type of safety razor is made with a guard 32 and a blade holder 33 supporting a blade 38, the parts of said holder 33 operatively connected by a pair of intermeshing gears 34 and 35 located at one end of the razor.

A fingerpiece is operatively connected to the guard 32 so that by moving this fingerpiece 36 the guard and the blade may be clamped in operative position, or the blade may be released from the guard and swing freely relative thereto.

The spring catches above referred to on the bracket 22 are projected through openings 37 in the ends of the bracket 22 so that by grasping these spring tongues by the thumb and finger of one hand and holding the device with the other hand the bracket may be moved into holding position, as shown by full lines in Figure 5, or to releasing position as shown by dotted lines in Figure 5.

The operation of my improved device is as follows:

First the bracket 22 is swung to the dotted line position shown in Figure 5. The razor is then inserted into position between the frame and the bracket with the fingerpiece 36 in position under the top wall of frame 18. While in this position the razor is given an upward movement so as to press the fingerpiece against the underface of the frame 18 and cause the blade to be released from the guard and to fall by gravity into vertical position. The blade is then lowered until the gear 35 meshes with the gear wheel 21, the downward movement of the razor being limited by the extensions 29 on the frame 18. The bracket 22 is then swung into its operative or closed position, the catches 25 holding the bracket in such position and supporting the razor against displacement.

It will be noted, particularly by reference to Figure 2, that when the parts are in the

position above described the lower end of the blade will lie in a plane between the hones 16 and 17. The operator grasps the razor handle 31 and reciprocates the razor and the frame 18 within the casing. The initial movement of the frame and razor will cause the gear 21 to turn the gear 35 in a direction to force the blade against one of the hones. This is due to the fact that the sleeve 19 has a frictional mounting in the frame 18 which allows it to turn slightly, and the movement of the frame on the screw 15 will insure this movement. When the blade engages the hone, further turning movement of the sleeve is prevented, and the longitudinal reciprocating movement imparted to the frame and the razor will cause the screw or worm 15 to revolve and transmit motion to the hones to turn them. This motion is transmitted through the medium of the gears 14, 11, 13 and 12 on the shafts 9 and 10, respectively. As the frame reaches one extremity of this stroke or movement, the beginning of another movement will, through the medium of the gear 21, cause the sleeve 19 to turn in the opposite direction far enough to swing the blade against the other hone, and it will be held against this hone during the movement of the frame and blade in the opposite direction. Hence it is simply necessary to reciprocate the frame and blade in the casing and during this movement the hones will be revolved and the blade will engage first one hone and then the other with sufficient pressure to properly perform the operation. A rapid reciprocation will cause the blade to be thrown against the hone with greater force than would be the case with a slower reciprocation of the frame, and hence the operator can control this honing or cutting of the edge as he may desire. However, under ordinary circumstances, only a few strokes of the frame are necessary for honing an average blade.

When the honing operation is ended, the bracket 22 is swung to the dotted line position shown in Figure 5 when the razor can be removed and be ready for stopping in the ordinary manner.

Various slight changes and alterations might be made in the general form of the parts described without departing from my invention and hence I do not limit myself to the precise details set forth but consider myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of the appended claims.

I claim:

1. A device of the character described, including a casing, a pair of rotary hones in the casing, a safety razor supporting frame constituting a manually operated prime mover and adapted to reciprocate in the casing, means for moving the blade into operative engagement with the respective hones during the reciprocating movements of the frame,

said means including a screw, a gear caused to turn by the screw, and gears on the razor meshing with said first mentioned gear.

2. A device of the character described, including a casing, honing devices in the casing, a screw shaft mounted to turn in the casing, a safety razor supporting frame constituting a manually operated prime mover and guided in the casing, a sleeve supported by the frame and operatively engaging the screw shaft, and a gear wheel on said sleeve adapted to mesh with the gear wheel of the razor and cause the blade of the razor to move into operative engagement with the hones when the frame is reciprocated.

3. A device of the character described including a casing, honing means supported in the casing, a reciprocating frame constituting a manually operated prime mover and mounted in the casing, a pivoted bracket on the frame, a safety razor adapted to be supported in the frame and held by the bracket with the blade of the razor swinging freely between the honing devices, and a screw shaft operatively engaging the frame and causing the blade to move from one honing device to the other upon the initial movement of the frame in either direction.

4. A device of the character described, including a casing constituting a manually operated prime mover and a reciprocating frame in the casing adapted to support a safety razor having a pivoted blade holder therein and gears operatively connected to the blade holder, a screw shaft mounted in the casing, a sleeve in the frame operatively engaging the screw shaft, and a gear wheel on the sleeve adapted to mesh with one of the razor gear wheels when the razor is in operative position in the frame whereby a blade in the blade holder is caused to move into operative position from one honing device to the other as the frame is reciprocated.

5. A device of the character described, including a casing, a safety razor holding frame constituting a manually operated prime mover and mounted to reciprocate in the casing, a bracket pivotally connected to the frame, spring catches on the bracket adapted to hold the same against the frame and maintain the razor in the frame, rotary honing devices in the casing, a screw shaft in the casing, gears operatively connecting the screw shaft and the rotary honing devices, a sleeve on the frame receiving the screw shaft and operatively engaging the same, and a gear on said sleeve adapted to engage a gear on the razor and cause the blade thereof to swing from one honing device to another.

ERNEST L. CRESPO.