April 20, 1937. H. C. WILKINSON 2,078,187

RAZOR BLADE HONER AND STROPPER

Filed June 26, 1935

FIG. 1.

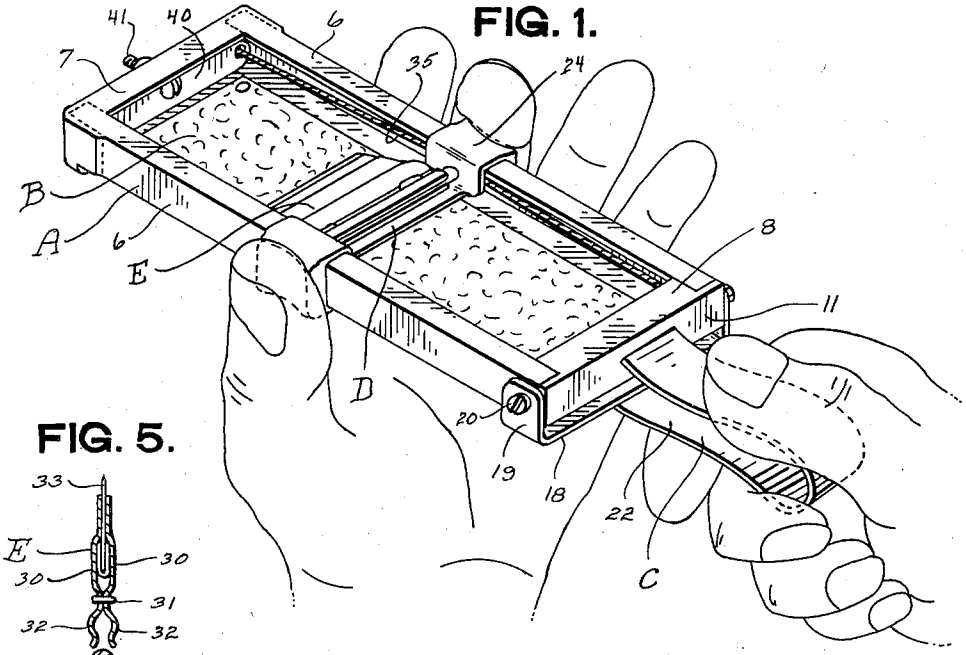


FIG. 5.

FIG. 2.

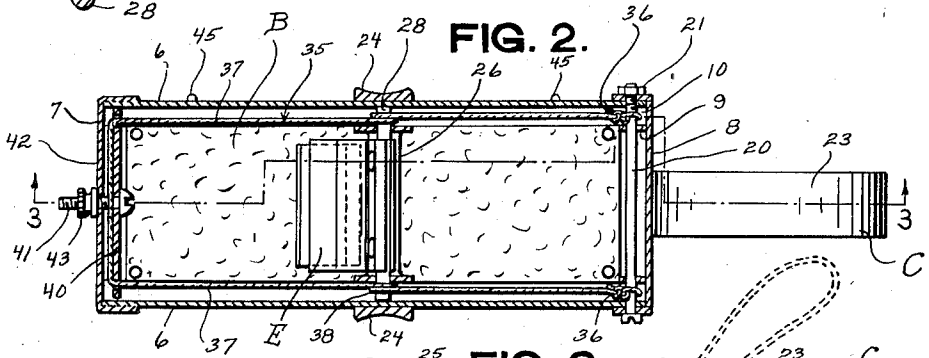


FIG. 3.

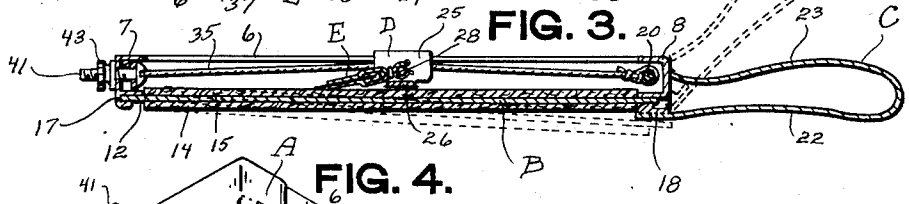
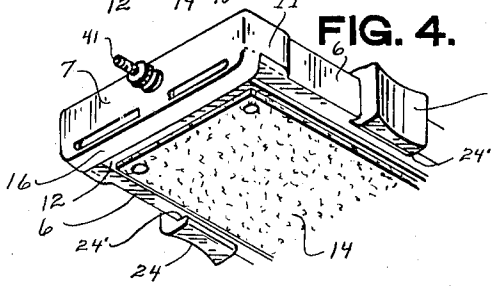


FIG. 4.



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RAZOR BLADE HONER AND STROPPER

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3 Claims. (Cl. 51—153)

The present invention relates to blade sharpening devices and the primary object of the invention is to provide an improved honer and stropper for use in sharpening safety razor blades of various types.

A further object of the invention is to provide a device of this character wherein the blade is sharpened by a reciprocatory movement and automatically reversed at the end of each stroke, with means for quickly and easily adjusting the tension upon the blade being sharpened.

A further object resides in the novel arrangement in which the sharpening element is mounted to permit the same to be readily reversed for either honing or stropping the blade.

A further object is to provide a razor blade honer and stropper adapted to be held in the hands of the operator and operated for sharpening the blade by a to and fro movement of one hand of the operator.

Other objects and advantages of the invention will appear in the following detailed description, taken in connection with the accompanying drawing forming a part of this specification and in which drawing:—

Figure 1 is a perspective view of the device shown in use for sharpening a razor blade.

Figure 2 is a longitudinal section thru the sharpener.

Figure 3 is a longitudinal section substantially on the line 3—3 of Figure 2 and showing in dotted lines the manner in which the sharpening element may be removed for changing from a honing to a stropping operation.

Figure 4 is a fragmentary perspective view looking at the outer end and under side of the sharpener.

Figure 5 is an enlarged transverse section thru the blade holder and showing the manner in which the holder is detachably associated with its carrier shaft.

In the drawing and wherein like reference characters designate corresponding parts throughout the several views, the blade sharpener comprises a rectangular-shaped frame A preferably formed from sheet metal and embodying a pair of channel-shaped side members or rails 6 joined at their outer ends by a channel-shaped end member or rail 7 and at their inner ends by a removable end member 8. As will be observed, the side members 6 and end members 7 and 8 are arranged with their open sides or channels opening inwardly and the web portions form the outer marginal surface of the frame. The removable end member 8 serves as a spacer for the inner ends of the side members 6 and is provided with end walls 9 which abut the edges of the flanges of the members 6 so as to provide a pocket 10 at the inner ends of the side members. As shown more clearly in Figure 1, the ends of the flat web portion 11 of the end member 8 abut against the inner ends of the side members 6.

Removably associated with the lower side of the frame A is a sharpening element B embodying a rectangular-shaped sheet metal plate 12 provided on one side with a hone 14 and on its opposite side with a strop 15. As will be observed particularly in Figures 3 and 4, the flat carrier plate 12 at its marginal portions projects slightly beyond the edges of the hone 14 and strop 15. Provided along the lower flange of the outer end member 7 is a strip 16 providing a groove 17 for receiving one end of the plate 12 as shown in Figure 3. When the sharpening element B is in position, the projecting side edges thereof engage against the lower flanges of the side members 6 while the projecting end portion of the plate which is not received in the groove 17 engages against the under side of the lower flange of the removable inner end member 8. The hone and strop 14 and 15 respectively, are of rectangular-shape and of a size to fit between the inwardly directed lower flanges of the frame.

The sharpening element B is removably and reversibly retained in position by means of a handle member C pivotally associated with the inner end of the frame A. This handle member C comprises a clamping strip 18 provided at each of its ends with a right angular ear 19 arranged to overlie the inner ends of the web portions of the channel side members 6. Extending thru the ears 19, webs of the side members 6 and the end walls 9 to extend in the channel of the end member 8 is a removable hinge pin 20 which is preferably threaded at one end for receiving a nut 21. A U-shaped handle formed of spring metal has its lower arm 22 rigidly secured to the central portion of the clamping strip 18 and has the free end of its upper arm 23 normally bearing against the flat web portion 11 of the end member 8. When the handle is swung into the plane of the frame A as shown in Figure 3, the clamping strip 18 engages an end portion of the plate 12 and clamps the same against the lower flange of the end member 8 and the spring action of the upper arm 23 acting upon the web 11 serves to retain the handle against upward swinging. When desiring to remove the sharpening element B, the handle member C is

swung upwardly to the dotted line position in Figure 3 which will allow for the plate 12 to be withdrawn from the groove 17.

The channel-shaped side members 6 provide slides for a carriage D embodying a pair of finger grips 24, one of which is slidably retained upon each of the side members 6. As shown in Figure 4, the finger grips 24 are each provided with an inturned flange 24' which extends beneath the side members 6. Extending downwardly from each finger grip 24 at the inner side of the side members 6 is a plate portion 25 and these plate portions are connected at their lower ends by a cross piece 26 which extends transversely across the frame just above the sharpening surfaces of the element B. Journaled in the plate portions 25, slightly above the cross piece 26 and having its ends projecting into the channels of the side members 6 is a shaft 28, the ends of which have sliding contact with the web of the side members.

The blade holder E is adapted for detachable connection upon the shaft 28 and preferably embodies a pair of clamping plates 30 hingedly connected as at 31 and formed along their attaching edges with oppositely arcuated portions 32 adapted to be clipped upon the shaft 28. The plates 30 are adapted to clamp a razor blade 33 therebetween. When the portions 32 are clipped upon the shaft 28, the blade engaging portions of the clamping plates are urged into firm contact with the razor blades. The clamping plates 30 are preferably formed of spring metal and when clipped upon the shaft 28, sufficient friction is formed between the clip portions 32 and the shaft as to cause the blade holder to rotate with the shaft.

Means is provided for imparting a rocking movement to the blade holder E upon to and fro movement of the carriage D and embodies a cord 35 having its ends tied or otherwise secured to the hinge pin 20 as at 36 within the pockets 10. The side runs 37 of the cord 35 extend in the channels of the side members 6 and are looped or wound one or more times about the end portions of the shaft 28 as at 38. The loops 38 are retained on the shaft 28 by the plate portions 25 of the carriage.

A means is provided for tensioning the cord 35 and embodies an equalizer bar 40 arranged longitudinally in the channel of the outer end member 7. This bar 40 is provided adjacent each end with an aperture thru which the cord 35 is trained as clearly shown in Figure 2. Extended thru the central portion of the bar 40 is an adjusting screw 41 having its threaded shank portion projecting thru the web 42 of the outer end member 7. A thumb nut 43 is threaded on the adjusting screw 41 and rotation of this nut will vary the tension on the cord 35.

By increasing the tension on the cord 35, will cause a greater friction upon the shaft 28 by the loops 38 and thus increases the pressure of the razor blade upon the sharpening surface. The loops 38 are so wound upon the shaft 28 as to cause the blade holder to extend in a trailing position, or in the direction opposite to that in which the carriage is moving.

Suitable stop means may be provided for limiting movement of the carriage upon the frame for preventing the razor blade from contacting either of the end members 7 or 8 and this means in the example shown in Figure 2 comprises a pair of stop lugs 45 provided upon one of the side members 6 to be engaged by one of the finger grips 24.

In use of the device, the razor blade 33 may first be clamped in the blade holder E and the holder then clipped upon the shaft 28. The carriage D is then moved back and forth on the frame A and at the end of each stroke the holder will be reversed thru the action of the loops 38 upon the shaft 28. During movement of the carriage, the loops 38 create a friction upon the shaft 28 tending to rotate the shaft and this tendency of the shaft to rotate urges the razor blade into contact with the sharpening surface.

Changes in deails may be made to the form of invention herein shown and described, without departing from the spirit of the invention or the scope of the following claims.

I claim:

1. A razor blade sharpener comprising a rectangular-shaped frame embodying channel-shaped side members and inner and outer end members, a sharpening element mounted in the lower portion of the frame, a carriage slidably guided on the side members, a shaft journaled in the carriage and having its end portions projecting into the channels of the side members, a blade holder mounted on the shaft, a cord having runs extending in the channels of the side members and looped about the end portions of the shaft, means securing the free ends of said runs to the inner end member, an equalizer bar thru which the central portion of the cord is looped at the outer end member, and means for adjusting said bar to vary the tension on the cord.

2. A razor blade sharpener comprising a frame embodying side members and inner and outer end members, a sharpening element mounted in the frame, a carriage slidably guided on the side members, a shaft carried by the carriage, a blade holder mounted on the shaft, a cord having its ends secured to the inner end member and providing parallel runs looped about the end portions of said shaft, a bar parallel to the outer end member and having apertured ends thru which the intermediate portion of the cord is trained, and means for adjusting the bar for varying the tension on said cord.

3. In a razor blade sharpener, a frame embodying side members and inner and outer end members, said outer end member having a groove provided along its lower side, a hinge pin securing the inner end member to the inner ends of the side members, a reversible sharpening element embodying a rigid carrier plate for engaging at one end in said groove, and a self-retaining spring handle pivoted on said hinge pin and embodying a clamping strip engageable with the other end of the carrier plate for releasably retaining the sharpening element in position in the frame.

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