Feb. 18, 1930. G. GRECO 1,747,827

SHARPENING DEVICE

Filed April 18, 1927

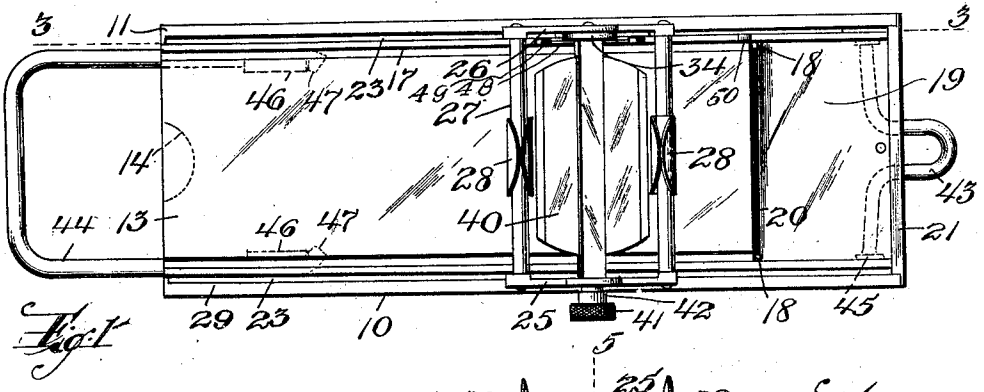


Fig. 1

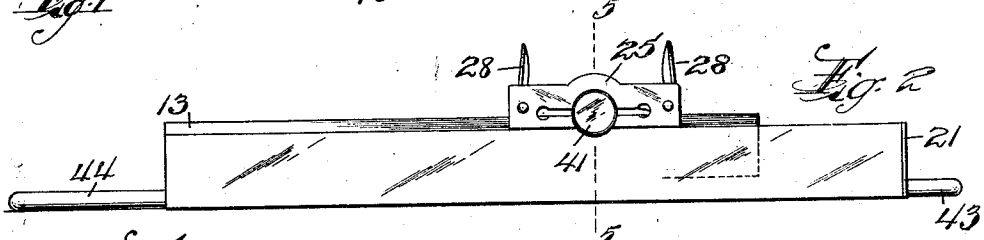


Fig. 2

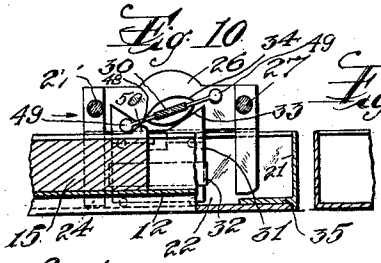


Fig. 10

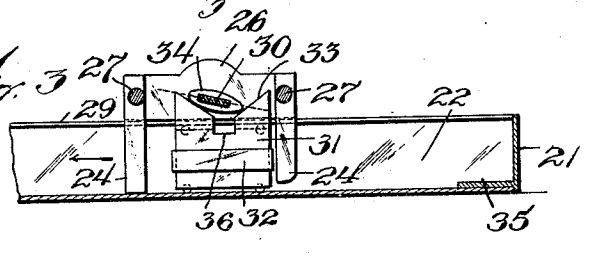


Fig. 3

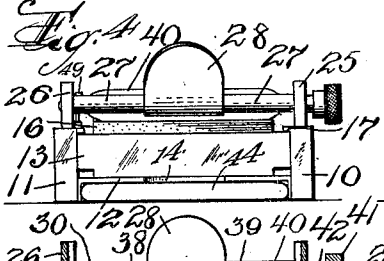


Fig. 4

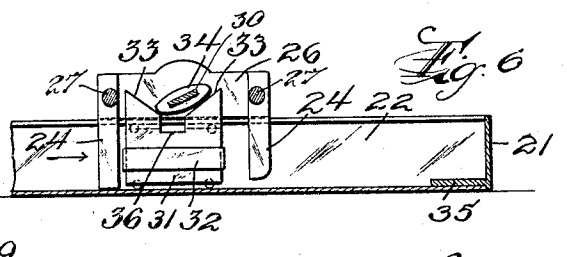


Fig. 6

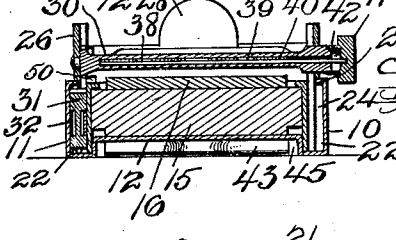


Fig. 5

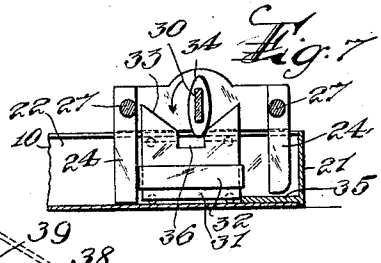


Fig. 7

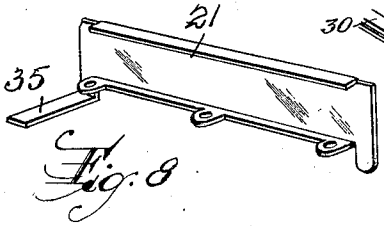


Fig. 8

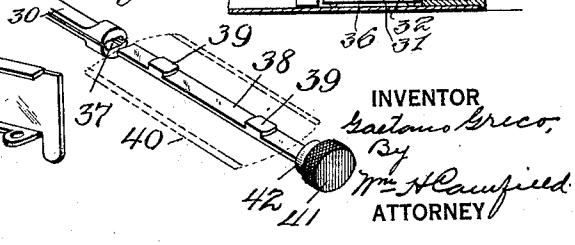


Fig. 9

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UNITED STATES PATENT OFFICE

GAETANO GRECO, OF NEW YORK, N. Y.

SHARPENING DEVICE

Application filed April 18, 1927. Serial No. 184,462.

This invention relates to an improved sharpening device for razor blades, preferably for safety razor blades, and can be adapted for those of various makes but I have illustrated and will describe the machine as constructed for sharpening blades of the Gillette type, the blade being carried to and fro across the face of a sharpening stone or strap and being automatically turned over when passed beyond the end of the sharpener or stone so that two edges can be sharpened on both sides without removing a blade from the machine.

The machine is adapted to have the sharpening article reversible so that a very dull blade can be first honed and then stropped.

The invention also comprises certain details of construction which will be hereinafter more fully described and finally embodied in the claim.

The accompanying drawing illustrates an embodiment of the invention and in said drawing Figure 1 is a top view of the sharpening device. Figure 2 is a side view of Figure 1 and Figure 3 is a section on line 3—3 in Figure 1. Figure 4 is an end view of the device shown in Figure 1. Figure 5 is a section on line 5—5 in Figure 2. Figure 6 is a view similar to Figure 3 but showing the blade carriage moving in the opposite direction. Figure 7 is a section similar to Figures 3 and 6 showing the position of the parts of the carriage in turning over the blade. Figure 8 is a perspective view of an end plate and Figure 9 is a perspective view showing the details of the blade holding shaft. Figure 10 is a detail of a modification.

The device is mounted within a suitable frame or casing usually made of sheet metal and I show one with the sides 10 and 11 in the bottom 12 which form a holder in which the hone 13 is slid from the back end and can be withdrawn readily by reason of the recess 14 in the bottom so that it can be turned over to either submit the blade to the sharpening action of the face 15 of the hone or to the face of the strop 16 which is usually a piece of leather cemented or glued to the other side of the hone.

Flanges 17 hold this sharpening article down and the projections 18 limit its movement so that when it is slid in as far as it will go it is in place and the limitation of the movement of the stone leaves a sort of well 19 between the end 20 of the sharpening article and the end wall 21 of the frame or casing and it will be evident from Figure 1. The carriage which carries the blade to and fro across the top of the sharpening article is suitably guided and I show the side walls provided with longitudinal openings or guides 22, the top of which forms slots 23 and the legs 24 of the side plates 25 and 26 pass down through the slots into the guide-ways 22 so that the side plates are kept aligned, their alignment being further insured by the cross pieces 27 which also act as supports for the finger pieces 28 which are grasped between the thumb and the first finger of the hand for sliding the carriage back and forth. The carriage is prevented from riding upward by having a recess in the outer face of each side plate 25 and 26 to receive the flange 29 in the top of each side wall and which forms one edge of the slot 23.

The side frames 25 and 26 act as bearings for the blade holding shaft 30 which clamps the blade between the side plates and the details of which clamping means will be described hereinafter. The blade holding clamp is pivoted so as to rotate in the side plates and is rocked so as to incline the blade upwardly in the direction in which it is travelling by reason of a drag or hold-back.

This drag is shown at 31 and consists of a plate sliding inside the slide-way 22 of the side wall 11 and is retarded by such means as the flat spring 32 which bears on the sides of the slide-way and when the carriage is started the drag does not move until one of its inclined top edges 33 is engaged by the cam 34 of the blade clamp 30.

The cam 34 is oval and its rounded sides slide up on the edge 33 against which it is pushed and there is just enough resistance to tilt the blade with its rear edge pressed against the hone and also to carry the drag along with the carriage. On a reversal of movement the same thing takes place in the opposite direction. These two operations will be evident from an inspection of Fig-

ures 3 and 4, the carriage in Figure 3 moving to the left and the movement being to the right in Figure 4.

The blade is thus sharpened on one edge and then on the other by passing the carriage to and fro across the face of the hone.

When the blade is to be turned over the only movement necessary is to move the carriage beyond the hone, that is, over the well 19. When this takes place the blade no longer engages the hone and the clamp of the blade is moved around to the position shown in Figure 7, as the drag engages a stop such as is provided by the finger 35 of the end plate 21 and the return movement of the carriage causes the cam 34 to be again positioned as in Figure 3 but with the other edge uppermost. In this way, the blade is turned over as often as necessary, by simply passing the carriage beyond the hone to release the blade from limited rotation to a free rotation and then the drag again engages the cam to complete the turn. The drag is recessed as at 36 to allow the cam to turn over.

The blade clamp 30 is usually a slotted bar which is recessed in the centre as at 37 which recess is large enough to receive the finger 38 and the lugs 39 which receive the end holes in the blade 40. The finger has a handle 41 and the flange 42 fits tight enough over the end of the bar to hold the finger in position by friction. Other means may be employed for holding the blade but I show one as adapted for a blade of the Gillette type.

The device can be used when it is on a table but if desired can be used as a strop is used by extending the swinging loop 43 from one end so that it can be caught over a nail or hook and sliding the handle 44 outwardly so that it can be grasped. In the drawing the loop is shown pivoted in bearings 45 in the side walls below the bottom 12 and the handle is shown in the sleeves 46 and the upsetting 47 on the ends of the wire limit the outward movement of the handle.

In Figure 10 I show a modification in which is illustrated a means for causing the edge of the blade to rise up a short distance as it passes from the edge of the hone which may be advisable in very thin blades or which, through the wearing down of the stone, the angle of the blade becomes a little changed at this point.

I show the blade clamp 30 equipped with two arms 48, the ends 49 of which ride over a hump 50 arranged on the flange 17 opposite the inner end of the hone. This insures the blade being raised up just enough to clear the corner of the hone as it leaves it.

I claim:—

A blade sharpening device comprising a frame, a sharpening article in the frame, a carriage slidable on the frame and beyond the article, means on the carriage for holding a blade and including a cam, a drag for engaging the cam and tilting it when the carriage is propelled, the drag having inclined surfaces against which the cam is forced and having a recess between the surfaces, a stop for halting the drag beyond the sharpening article whereby excess movement of the carriage allows the turning of the cam in the recess and the blade is reversed when the carriage begins its return movement.

In testimony whereof I affix my signature.

GAETANO GRECO.