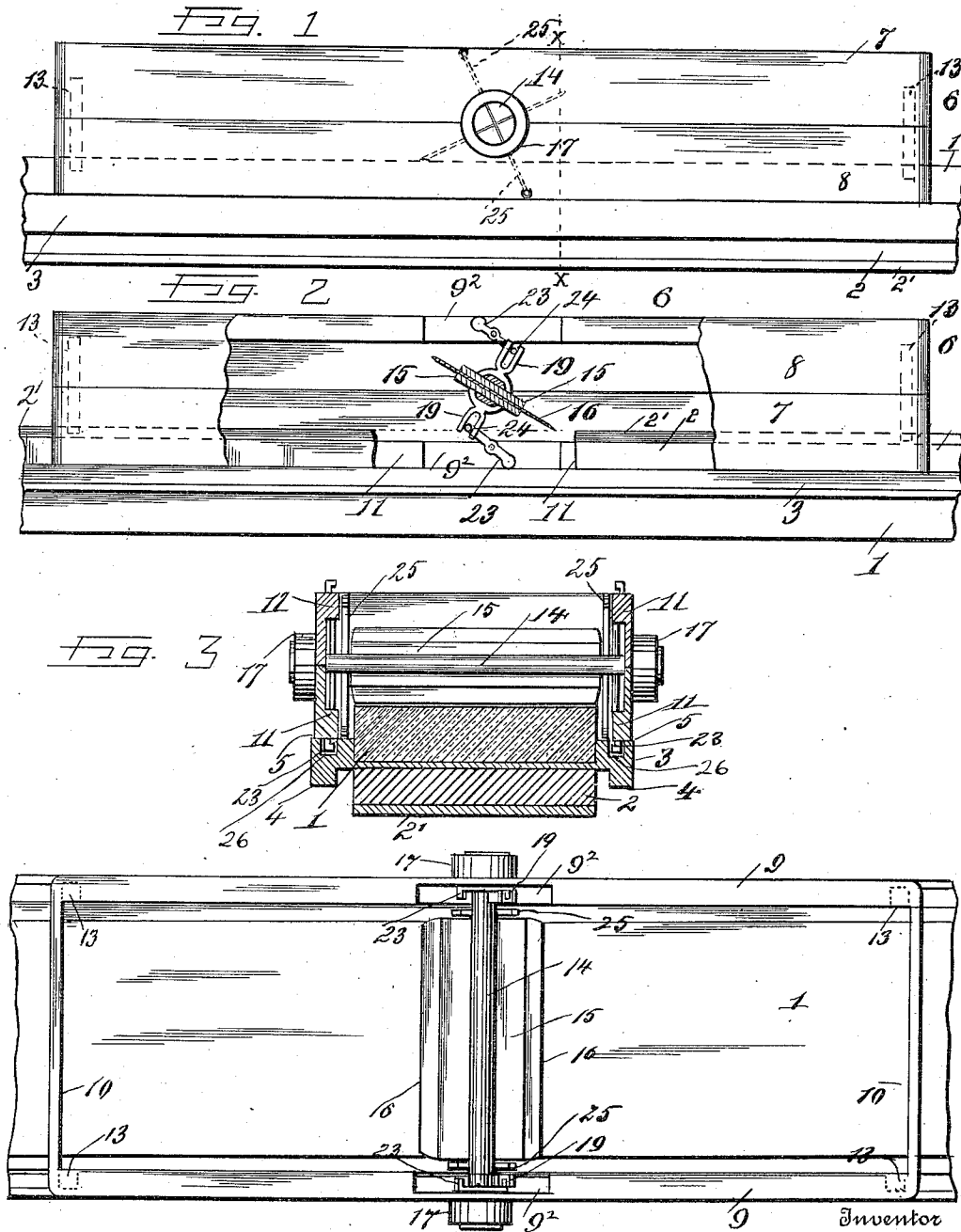


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 RAZOR SHARPENER.
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Patented Mar. 5, 1912.



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RAZOR-SHARPENER.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALBERT E. LATTA, citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Razor-Sharpener, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention has relation to machines for sharpening razor blades, and particularly to machines for sharpening the double edged blades of safety razors.

15 The object of the invention is to provide a machine which is adapted to both hone and strop the razor blade, it being understood that by honing is meant the grinding of the blade on a stone or other hard grinding surface and that stropping is the finishing of the blade on a leather or other soft surface.

20 In honing a razor blade, the practice approved of by experts, is to move the blade, while in contact with the hone, edgewise, forward, that is in the direction from the back or center of the blade toward the edge contacting with the hone; while the approved practice in stropping is the reverse, the blade being drawn backward, that is, in the direction from the edge. Accordingly, I have provided mechanism by which the blade, whether being honed or stropped, is held in contact with the honing or stropping surface while being moved over the same and by which a double-edged blade is turned on the pivotal bearings of the blade clamp, so as to alternately bring its lower edges into contact with said surface. I have also provided means whereby the blades may be honed or stropped on both sides and finally I have provided means whereby, in either honing or stropping, the proper direction of movement of the blade against the honing or stropping surface is insured and improper honing or stropping prevented.

35 The apparatus embodying my invention comprises a blade holder in which the blade, secured in a suitable clamp, is mounted, and a combined strop and hone provided with side flanges on which the holder moves, and which cooperate with mechanism on the holder to effect the proper adjustment and rotary movement of the blade.

50 In the accompanying drawings illustrating my invention: Figure 1 is a side view of

the machine comprising the blade-holder, and the combined hone and strop, the parts being in honing position. Fig. 2 is a similar view, the parts being in stropping position, the side of the holder being partially broken away. Fig. 3 is a transverse sectional view on the line X—X of Fig. 1. Fig. 4 is a plan view of the apparatus as shown in Fig. 1.

60 The hone 1 is a slab of any suitable hard abrasive material, and has attached to one face a strip of wood 2 to which is secured a leather strop 2'. Projecting from each side of the hone is a metallic flange or guide 3, which may be secured to the hone in any desired way, as by cementing a plate of metal to the back of the stone and letting its edges project laterally as shown. The flanges 3, are stepped as shown, so as to provide two guides on each, at different heights, as 4 and 5 for the purpose herein-after described.

70 The blade-holder consists of a rectangular box 6, made in the form of two horizontally separable frames 7, 8, each composed of side bars 9, and end cross bars 10. The side bars 9, have each two inwardly projecting flanges 11, at their outer edges, each pair of flanges being separated at the middle by a space 9², and the frame 7, is provided at its corners, on the inside with blocks 13, over which the other part 8, tightly fits to hold the two in proper relation when being used.

80 The flanges 11, when the machine is in use, are supported by the flanges 3, that is when used in stropping by the webs 4, of said flanges and with the box 6, arranged to move lengthwise thereon, and when used for honing, by the steps 5. The purpose of making the structure 6, in two horizontally divisible parts is to provide for the insertion and removal of the blade clamp, which consists of a longitudinally split shaft 14, each member of which has two radially projecting wing like plates 15, which form clamping surfaces to clamp and hold in position the double-edged razor-blade, 16. The ends of the members of the split shaft 14, are split crosswise of the line of division between the members to provide elasticity, and when the blade is in position, rings 17 are forced on the ends of the shaft, the ends of the latter being slightly beveled, and the members held tightly together. The shaft

14 rests in circular openings, formed by cutting half circles in the contacting edges of the frames 7, 8, which are separable when it is desired to insert or remove the shaft 14.

19 designates forked pins projecting radially from the shaft 14, outside the clamping plates or wings 15. A lever 23 is centrally pivoted to the inside of each frame 7, 8, and has a laterally projecting pin 24 engaging in the fork of pin 9.

In Fig. 2 showing the relative position of the parts, when the machine is used for stropping, it will be seen that the razor-blade, when touching the strop, lies at an acute angle to the strop and that the lever 23 of frame 7 is at a parallel angle, the blade holder being applied to the strop with the frame 7 down or nearest the strop. Now as the blade holder 6 is moved in a direction away from the edge of the blade, the pressure contact between the end of lever 23, and the surface 4 of the strop flange, keeps the edge of the blade in proper pressure contact with the strop, the position of the pin 19 being at a right angle to that of the lever 23. When the blade holder 6 has been moved on the flanges 3 so far that the lever 23 of frame 7 passes beyond the end of the flanges 3, the said lever 23, drops down below the surface of the flange 3 and, as the movement of the blade holder 6 is reversed, the lower end of lever 23 strikes the end of flange 3 and the lever 23 is reversed, thus causing the razor clamp and razor blade to turn over so as to present the unstropped edge of the blade to the strop. The same operation takes place at the end of each complete movement of the blade holder 6. When the blade has been sufficiently stropped on one side, the blade holder 6 is inverted and applied to the strop with the frame 8, down and the other side of the blade stropped. To hone the razor-blade, the blade holder is applied to the hone in the position shown in Fig. 1. The holder 6 is then supported by the surface 5 of flanges 3 and moves lengthwise thereon.

25 designates elastic fingers projecting radially from the shaft 14 inside the blade holder 6, in such position that when the blade holder 6 is applied to the hone such fingers will contact with the ledges or surfaces 5 of the flanges 3, while the levers or tappets 23 will project into the spaces 26 and avoid contact with the flanges 3. As no levers or tappets corresponding to levers 23 intervene between the fingers 25 and the flanges 3, the pressure contact between the steps 5 and the fingers 25 will, when the blade holder is moved lengthwise, cause the razor-blade to impinge on the hone and advance edgewise, as is proper and advantageous in honing. When the blade holder 6 has been sufficiently moved along to free the fingers 25 from contact with the surface 5 of the flange 3, at the ends thereof, the fingers

25 will fall so that on the return stroke of the holder they will strike the ends of the flange 3 and their positions will be reversed, such reversal of movement causing the shaft 14 to turn or rock on its bearings and present the opposite edge of the razor-blade to the hone. On completion of this reverse movement of the blade holder, the shaft 14 and razor-blade will be turned over to their first described positions and the honing operation continued, after honing one side of the blade, the holder is turned, as in the operation of stropping, to hone the other side. The fingers 25 are made elastic so as to cause the blade to press on the hone with an easy yielding pressure requisite for honing.

I claim:

1. A machine for sharpening double edged safety-razor blades, comprising a combined hone and strop, and a reciprocating blade holder, said hone and strop being provided with side flanges adapted to support the blade holder, having, each, a guide surface and a channel on each side, the guide surface on one side being opposite the channel on the other and said blade holder being provided with a pivoted blade holding clamp and with mechanism adapted at one position of the blade holder to engage one side of said flanges whereby in honing, the razor-blade is held in contact with the hone while being advanced edgewise, and said blade holder being provided with mechanism adapted at another position of the blade holder to engage the opposite sides of said flanges, whereby, in stropping, the blade is wiped or drawn backward over the strop, said mechanisms being adapted to rock the blade alternately from edge to edge at the end of each stroke, and said blade holder and its mechanisms being adapted to the honing or stropping of both sides of a blade.

2. A razor sharpener, comprising a slab having side flanges, and honing and stropping surfaces on opposite faces, a reciprocating blade holder, mounted to slide on said flanges and reversible thereon, a rotary blade clamp mounted on said holder and provided with mechanism adapted to engage and cooperate with the flanges of the sharpening slab, whereby, in honing, the blade will be held in contact with the honing surface when moved forward edgewise only and whereby, in stropping, the blade will be held in contact with the strop when wiped or drawn backward only.

3. A razor sharpener, comprising a strop with laterally projecting flanges, and a blade holder, provided with a pivotally mounted blade-clamp, adapted to be rocked or tilted in its bearings, forked pins projecting from the blade clamp, and levers engaging with said forked pins and adapted to contact with the flange of the strop and

to hold the blade in wiping contact with the strop and at the end of each stroke to tilt the razor blade.

5 4. A razor sharpener, comprising a sharpening slab with side flanges and a reversible blade holder having a rocking blade-clamp with diametrically opposite fingers projecting radially therefrom, adapted to slide on the flanges of the sharpening slab and to hold the razor-blade in contact with the sharpening surface while advancing edge- 10 wise and to be shifted at the end of a sharpening stroke by contact with the ends of said flanges.

15 5. A razor-blade sharpener consisting of a strop having side flanges and a reversible reciprocating blade holder comprising two matched and separable rectangular frames, a detachable rocking blade clamp with radial pins and mounted between the frames, each frame having mounted on it means en- 20 gaging with the strop flanges for holding the blade in wiping contact only with the strop, and with the pins for rocking the blade on the reversal of the stropping operation at the end of each stroke.

25 6. A razor sharpener comprising a reversible sharpening slab having side flanges and having on one face a strop, and on the 30 other face a hone surface, a reciprocating frame adapted to be supported by and move

on said flanges, a pivotally mounted blade holding clamp on said frame and coöperating means, on the slab and on the clamp to cause the blade to impinge on the hone 35 when moved edgewise over the same only and to adhere to the strop when wiped over the same only, said coöperating means consisting in two sets of fingers projecting from the clamp, the flanges of the slab hav- 40 ing each double guiding surfaces at different positions, respectively contacting with different fingers, according to the position of the hone or strop with reference to the blade.

45 7. A razor sharpener comprising a reversible sharpening slab having on one face a strop, and on the other face a hone surface, a reciprocating frame, a pivotally mounted blade holding clamp on said frame 50 and coöperating means on the slab and on the clamp to cause the blade to impinge on the hone when moved edgewise over the same only and to adhere to the strop when wiped over the same only.

55 In testimony whereof I affix my signature in presence of two witnesses.

ALBERT E. LATTA.

Witnesses:

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