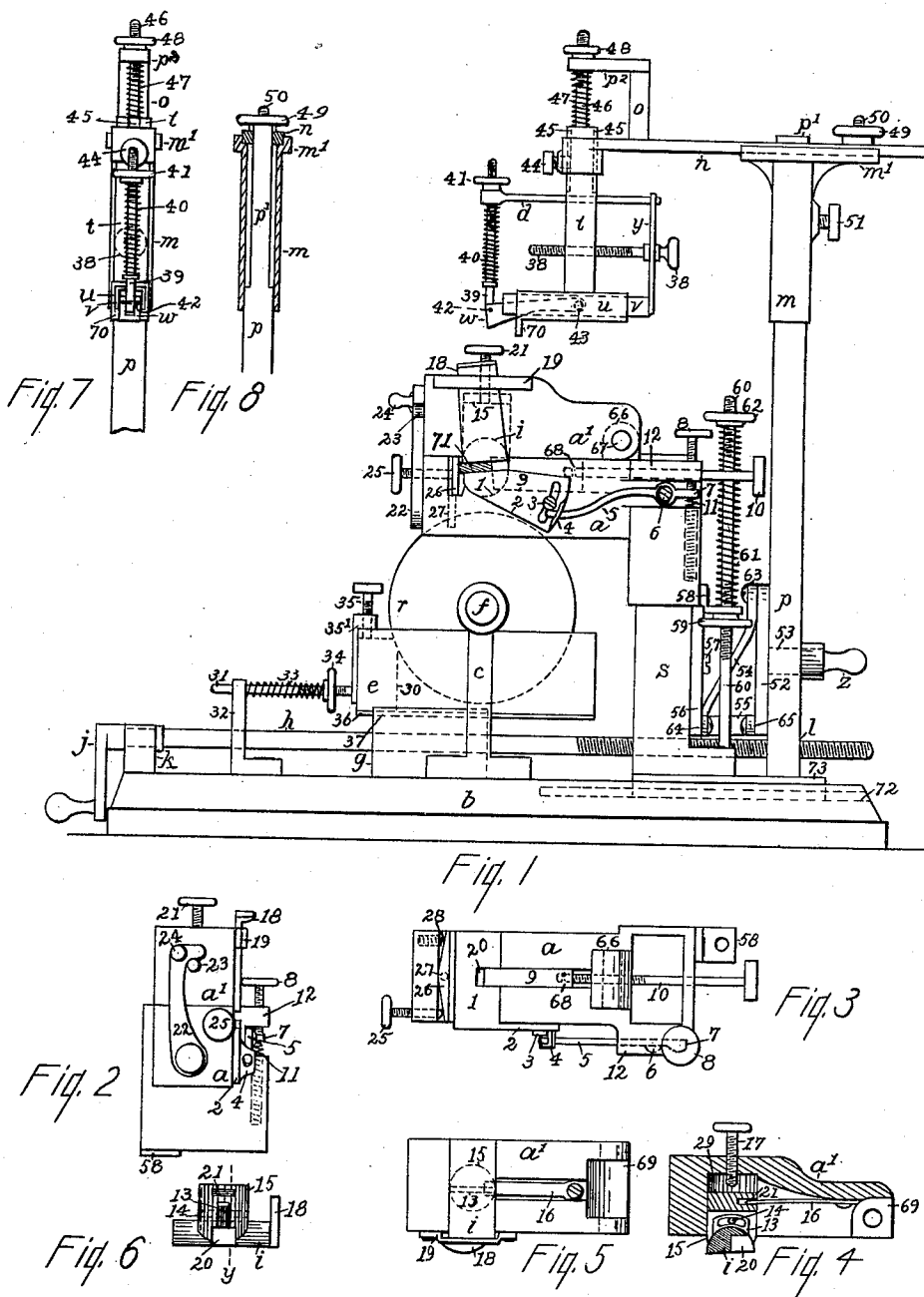


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RAZOR HONING MACHINE.
APPLICATION FILED FEB. 8, 1911.

Patented June 18, 1912.

2 SHEETS-SHEET 1.



WITNESSES:

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Allen Barger

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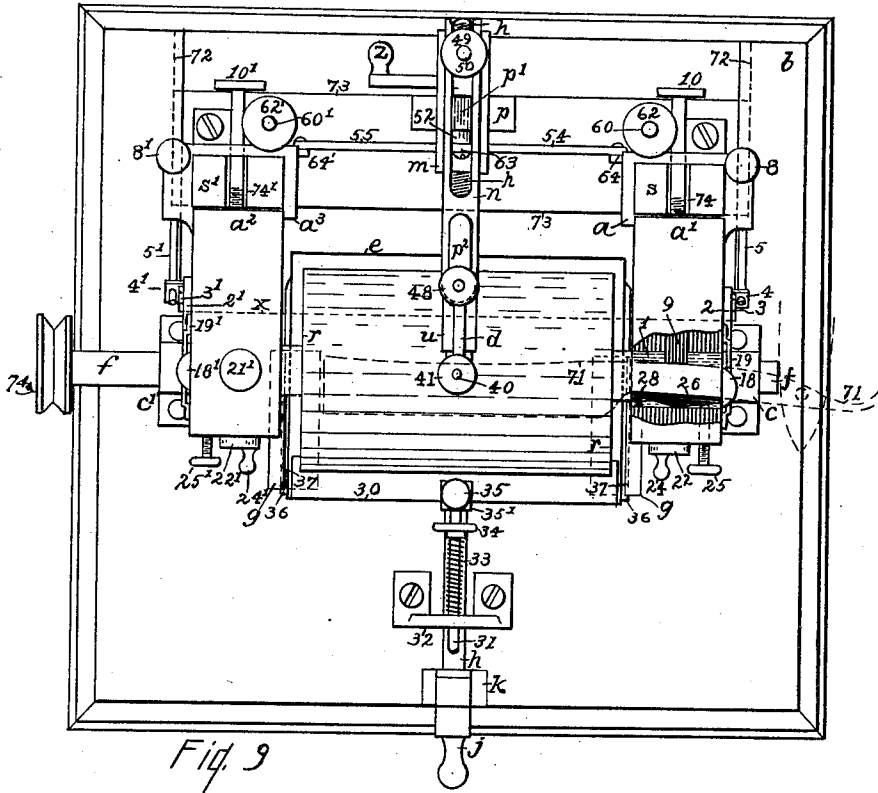


Fig. 9

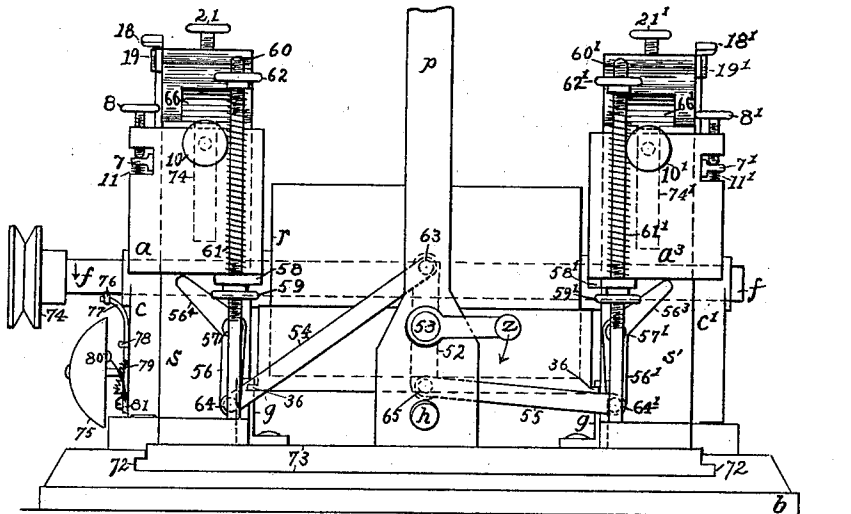


Fig. 10

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JOHN KAYETAN, OF COLD SPRING, NEW YORK.

RAZOR-HONING MACHINE.

1,030,256.

Specification of Letters Patent.

Patented June 18, 1912.

Application filed February 8, 1911. Serial No. 607,284.

To all whom it may concern:

Be it known that I, JOHN KAYETAN, a citizen of the United States, and resident of Cold Spring, in the county of Putnam and State of New York, have invented certain new and useful Improvements in Razor-Honing Machines, of which the following is a specification.

This invention relates to the sharpening of razors, and its object is to provide a means for holding a razor against a revolving honing stone or stropping roller, the means being in a variety of ways adapted for varying shapes and sizes of razors, in a manner that will make it possible to handle many razors in a short time.

The means are set forth in these specifications and the accompanying drawings, in which like letters and numbers refer to like parts throughout the several views.

Figure 1 is a side elevation of the machine. Fig. 2 is a front view of razor clamping devices detached from the machine. Fig. 3 is a plan of the inner parts of the lower clamping arm. Fig. 4 is a transverse section of the upper clamping arm. Fig. 5 is a plan of the inner parts of the upper clamping arm. Fig. 6 is an elevation of parts shown in cross-section in Fig. 4. Fig. 7 is a front elevation of the razor blade auxiliary adjuster. Fig. 8 is a cross-section of the adjuster support. Fig. 9, Sheet 2, is a plan of the machine. Fig. 10 is a rear elevation of the machine.

Figs. 1 and 9 show the machine to be mounted upon a base *b* that is recessed on its surface, as at 72, to receive a sliding block 73. Upon this block is secured a post *p* *p*¹ and standards *s* *s*¹. The block is movable within the recess by means of the screw *h* which screws through the broadened base of the post, and is held from lateral movement in the bearing *k*. The screw is turnable by the crank *j*.

About midway of the base are standards *c* *c*^x which support the shaft *f*, and upon the shaft is a driving pulley 74, and an abrading or honing roller *r*. Beneath the roller, inclosing the under part of the roller, is a box *e* for holding oil, water or other lubricant for use on the roller. The box has flanges 36, Figs. 1, 9, 10, on its bottom that extend within grooves in the standards *g*. A rod 31, Figs. 1, 9, fast to the front of

the box has an end support 32 fast upon the base *b*. A nut 34 is on the rod next the box, and a spring 33 upon the rod is compressible by means of the nut. Within the box a stone 30 is held by a screw 35 in a bracket 35¹, the stone being designed to be kept in contact with the roller to keep back a superfluous quantity of lubricant, and at the same time help to maintain the regularity of the surface of the roller. The pressure of the stone against the roller is controllable by means of the nut and the spring.

A description of the standard *s* and the parts supported by it will apply also to the standard *s*¹, as one is a duplicate of the other, except that one is right handed and the other left handed. Upon the standard *s*, which is fast on the block 73, is a sliding arm *a*, Figs. 1, 9, and 10, and in detail in Figs. 2, 3. Mounted upon the arm is a block *a*¹, see also Figs. 5, 6, hinged thereto by means of the lug 66 on the arm, the recess 69 in the block, and the pintle 67, Fig. 1. The block and arm are held closed by the catch 22, pivoted on the arm, and the pin 23 on the block. A handle 24 is provided on the catch. These two parts constitute a vise or clamp for holding the razor, and they are made vertically adjustable upon the standards by means of a lug 58 on the arm, which passes over a screw 60 that is fast on the base of the standard. A spring 61 rests upon the lug, and a nut 62 on the upper end of the screw is for adjusting the tension of the spring which always has a downward thrust upon the lug. A nut 59 under the lug is to regulate the amount of the downward pressure when the razor is in contact with the honing roller.

The means for holding the razor are in the ends of the clamping arms. A base piece or anvil 1 has a semi-circular seating in the arm *a*, and its flat surface may be held level or be turned to an angular position as shown in Fig. 1. An arm 2, Figs. 1, 3 and 9, is fast to the anvil and has a vertical swing upon the screw-stud 3. A lever 5 is pivoted to the arm *a* at 6, and the long end of the lever engages with the arm 2 by passing through the lug 4 which is a part of the arm 2. The short end 7 of the lever 5 is acted upon by a screw 8 in the projection 12 on the arm *a*, and a spring 11 keeps

this end of the lever against the screw. By means of the screw the position of the face of the anvil is regulated.

Immediately above the anvil 1 is a like anvil i reversed in its position. Figs. 4, 5, 6, show the details relating to this upper anvil. Fig. 4 shows a recess 29 in the block a^1 fitted with a round guide 15, concaved in its outer end to fit the convex surface of the part i , which has a lug 13 upon its convex side extending into a slot in the guide. The lug is slotted and through the slot is a pin 14. Thus the anvil is turnable in its seat in the guide, and is manipulated by a lever 18 fast to one end and extending up the side of the block a^1 . A guard 19 keeps the lever in place, and limits the downward movement of the guide and anvil. The razor to be honed is held between the anvils, and to facilitate the holding the anvil is normally thrust downward by the spring 16, Fig. 4. For compressing the upper anvil against the lower a screw 17 is provided. At 71, Fig. 1, the position of the razor shank between the anvils is shown.

In front of the anvil 1 is an adjustable jaw 26, Figs. 1, 3, 9. It has a plain front face, while its back is tapered from its center to each end, and it is supported on a central pivot 27, Figs. 1 and 3. The jaw has a solid backing at its center, and is movable on its pivot by means of the screw 25, and a spring 28, Figs. 3 and 9, holds it normally against the screw. The object of this jaw is made plain in Fig. 9, in which the shank of the razor, 71 is shown to be secured. Usually the shank of a razor is not parallel with the edge of the blade, so that to adjust the razor blade parallel with the roller r , adjustment has to be provided in the shank clamping means. Fig. 9 explains clearly the object of the adjustable jaw. To hold the razor shank against the jaw solidly, in the arm a is a sliding clamp 9, shown particularly in Fig. 3. The clamp is swiveled at 68 to a screw 10, which extends to the rear of the arm a . In Fig. 9 it will be seen how this clamp is pushed forward to secure the razor shank against the adjustable jaw. The anvils are recessed, as at 20, Fig. 4, to admit of the advance of the clamp 9. This is made necessary by the varying widths of razor shanks. It is thus shown how there are several points of adjustment to bring the razor to a proper position on the honing stone, namely, the adjustable anvils the movable clamp 9, and the adjustable jaw 26. The object of making all these parts movable by means of the screw h is, that they may be moved back, away from the roller r during the setting and all but the finer adjustments of the razor. With a like object the razor holding arms are adapted to be raised and lowered, by means shown in Figs. 1, 9 and 10, and particularly in Fig. 10. Crank-levers 56

56¹ are pivoted at 57 57¹ to the standards s, s^1 , with their short arms 56⁴ 56³ under the edges of the arms a, a^3 . In the post p is a shaft 53, and on the inner end of the shaft is a cross-arm 52. The upper end of the cross-arm at 63 is connected by the bar 54 with the long arm of the lever 56 at the point 64. The lower end of the cross-arm at 65 is connected at 64¹ with the long arm of the lever 56¹. A crank z on the shaft is for manipulating these several parts. The crank in the position shown causes the lifting of the arms a, a^3 as shown. Turning the crank the way of the arrow allows the springs 61, 61¹ to force the arms a, a^3 downward to contact of the lugs 58, 58¹ with the nuts 59, 59¹, and these nuts are manipulated to adjust the contact of the razor with the honing roller.

In honing a razor it is operated upon on both sides, which is the object of duplicating the holding means described at the ends of the honing roller, and the practice should be to give each side equal treatment, for which purpose an indicating bell is provided, as in Fig. 10. A bell 75 is held to the standard c . A lever 77 pivoted to the standard is operated by a pin 76 in the shaft f . A spring 79 holds the lever 77 normally against the stop 78. A clapper 80 strikes the bell at each revolution of the shaft f . By counting the bell strokes, the same number of revolutions of the honing roller may be given upon each side of the razor, the razor being moved to and from the roller by means of the crank z .

Upon the post p is a slide m with a grooved cross-arm m^1 , Figs. 1 and 9. An arm n slides in the groove of the arm m^1 and is slotted to pass over the upper end p^1 of the post p , and also the holding screw 50. A set-screw 51 secures the slide in position, and the nut 49 holds the arm n in position. The forward end of the arm n carries a spindle t that can be raised and lowered in its socket, and is held by the screw 44. To prevent turning sidewise the end of the screw 44 is seated within grooves 45, Figs. 1 and 7, in the spindle. As the spindle is reversible a groove is provided on opposite sides of the spindle. A bracket o p^2 on the end of the arm n affords a guide for the screw 46 which is fast in the spindle t . A spring between the bracket arm p^2 and the end of the spindle and a nut 48 above the bracket arm makes the spindle vertically adjustable by means of the nut when the screw 44 is loose.

The lower end of the spindle t is provided with a sliding holder for a finger piece w . A front view of these several parts is given in Fig. 7, a side view in Fig. 1. A casing u is fast to the spindle and has a drooping flange 70. Within the casing u is another casing v , within which the finger piece is

pivoted at 43. The casing *v* is moved back and forth in the casing *u* by the screw 38, which screws into the spindle *t*. The bar *y* connects the casing *v* with the arm *d* which slides in the spindle *t*. A screw 39 is pivoted to the finger piece *w* and extends upward through a bearing in the end of the arm *d*. A spring 40 on the screw bears against a collar on the screw, forcing the screw downward, so that the raising and lowering of the finger piece is controlled by the nut 41. This device is midway between the razor clamping arms, as shown in Figs. 9 and 10. When the razor is in place on the honing roller this auxiliary blade adjustment is lowered and the flange 70 is brought against the back of the blade, as in Fig. 1, and what is called the finger piece can be lowered upon any part of the width of the blade between the back and edge, and the pressure that will be exerted upon the blade is controllable by the nut 41, the position of the flange 70 being controlled by the screw 38. The upper end of the post *p* is narrowed as at *p*¹; Fig. 8, to fit the slot in the arm *n* to avoid undue width and heaviness that would be required in the arm *n* if it were fitted over the full width of the post *p*.

The various operations required to set and adjust a razor for sharpening having been described in the description of the parts, it is not necessary to repeat them. For stropping a razor a leather or other buffing roller may be substituted for the honing roller, and for this use the lubricant box *e* can be dispensed with. For some kinds of work the stone 30 will not be required in the box, when of course the sliding features of the box and the spring adjustment would be discarded. It will not be essential in all cases that the indicating bell be used. In some uses the auxiliary adjusting devices will not be required, so that it is plain that I do not wish to be confined to the constructions I have shown, nor to the exact forms shown, so long as I do not depart from the principles of my invention.

Having described my invention what I claim and desire to secure by Letters Patent is—

1. In a razor honing machine the combination of a revoluble stone mounted on the machine base, a movable base upon the said machine base slidable between the supports of the said stone, means on the slidable base at each side of the stone for holding a razor for engagement with the stone, means attached to the movable base and extended above the stone for pressing the razor down upon the stone, and means as a hand screw for moving the movable base to and away from the stone.

2. In a razor honing machine the combination comprising a revoluble stone mount-

ed on the machine base, a movable base on the machine base between the supports of the stone movable by means of a hand screw, means on the movable base on each side of the stone for reversibly holding a razor, and a post on the movable base with an extendible arm above the roller with adjustable means supported on the arm for regulating a downward pressure on the roller.

3. The combination in a razor honing machine of a revoluble stone mounted upon the machine base, a movable base on the machine base between the supports of the stone and movable by means of a hand screw, posts on the movable base, vertically slidable brackets on the posts embodying means for holding a razor, and means for simultaneously raising and lowering both brackets comprising a central bearing on the movable base, a shaft in said bearing, a handle and rocker arm on said shaft, cams on the bracket posts to act against the brackets on the posts, and bars connecting the cams with the said rocker arms.

4. A machine for sharpening razors comprising a base, a revolving sharpening roller supported on the base, clamping arms at each end of the roller comprising two parts hinged and clampable together with means near their ends for adjustably holding a razor, the clamping arms vertically slidable on standards, standards for the clamping arms attached to a movable base, a movable base within the machine base supporting said clamping arms, a screw having a bearing on the machine base and a threaded connection with the movable base, and a shaft in a bearing on the movable base, a handle and cross-arm on the shaft, crank-levers pivoted on the clamping arm standards contiguous to the sliding arms, and connections between the cross-arm and the crank levers.

5. The combination in a razor sharpening machine of razor holding means comprising an arm adapted to be raised and lowered on a standard, a member hinged to the top of the arm, a hook for clamping the two together, a semicircular anvil seated in the lower member, a sector lever fast to the anvil and swingable at the side of the arm, a lever pivoted to the side of the arm with its long arm engaging with the said sector-lever, a screw to actuate the short arm of the lever, a spring to keep the short arm of said lever against the said screw, a pivoted jaw in front of the anvil, a screw to move the jaw and a spring to maintain contact of the jaw with the said screw, centrally of the arm a sliding clamp, a screw swiveled to said clamp for moving the clamp; and means in the top member comprising a guide socketed in the said member, a semicircular anvil hinged in said guide, a spring within

the member to force the guide outward, a lever on the end of the anvil and a guard on the member to limit the movement of the lever, and a set screw in the member to engage with the top of said guide.

5 6. In a razor sharpening machine the combination with means for clamping a razor comprising an arm slidable on a standard and supporting means for adjustably holding the razor, of a screw rod
10 fixed adjacent to the said arm and parallel with said standard, a lug on said arm encircling said rod, a nut on the rod below said lug, a spring on the rod above said lug,
15 and a nut on the rod above the spring.

20 7. In a razor sharpening machine the combination with a sharpening roller and means for holding the razor on said roller, of auxiliary razor adjusting devices comprising a slidable arm, a post on the machine supporting said arm, a spindle in the arm, a bracket on the arm above the spindle, a stem in the spindle reaching through

said bracket, a spring on the stem between the spindle on the bracket, a nut on the rod 25 above the bracket, a set screw to hold the spindle, a casing on the lower end of the spindle, a sliding casing within said casing, a finger piece pivoted within said sliding casing, a rod through the spindle parallel 30 with said casings, a bar connecting said rod with said sliding casing, a screw rod pivoted to said finger piece and passing through the said parallel rod, a spring on the said rod below the parallel rod, a nut 35 on the screw rod above the parallel rod, and a screw having a bearing in the connecting bar and screwing through the spindle parallel with said sliding casing.

Signed at New York city, in the county 40 of New York and State of New York, this 20th day of January A. D. 1911.

JOHN KAYETAN.

Witnesses:

GUY A. LEE,

ROBERT SEDGWICK, Jr.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."