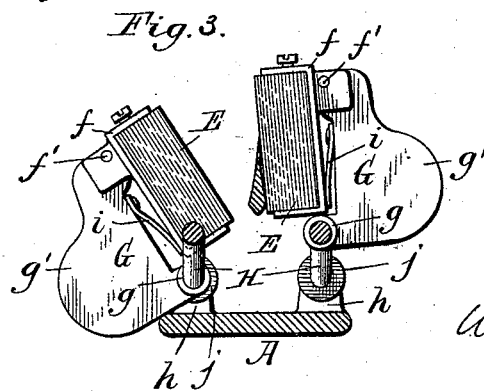
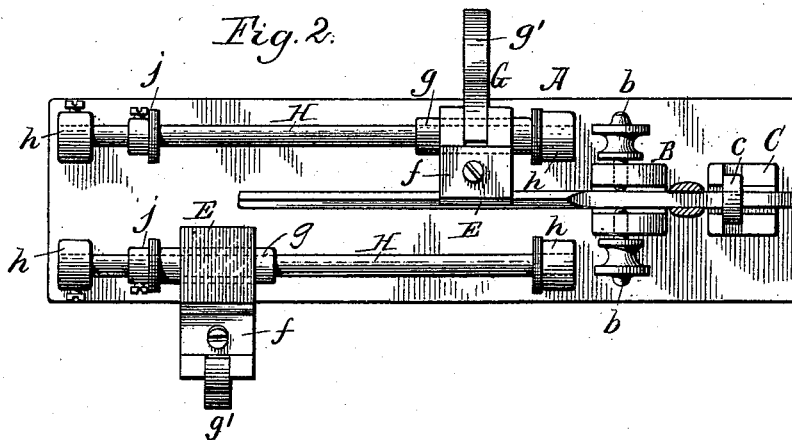
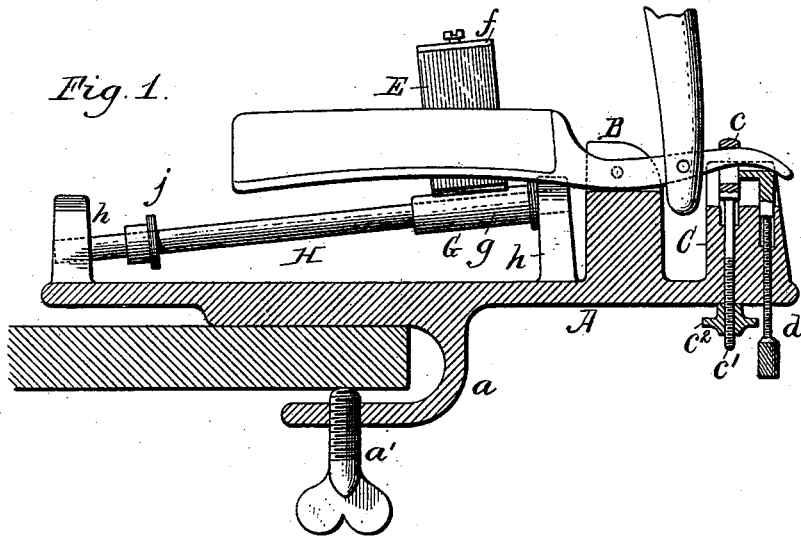


(No Model.)

W. H. MATHER.
RAZOR HONING MACHINE.

No. 523,438.

Patented July 24, 1894.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM H. MATHER, OF CLEVELAND, OHIO.

RAZOR-HONING MACHINE.

SPECIFICATION forming part of Letters Patent No. 523,438, dated July 24, 1894.

Application filed April 9, 1894. Serial No. 506,840. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. MATHER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Improvement in Razor-Honing Machines, of which the following is a specification.

This invention relates to a machine for honing or sharpening razors and it has for its object to produce a machine of simple construction which can be manufactured at small cost and which is so organized as to permit the ready insertion of the razor into the holder, without danger of nicking its edge, and so that the pressure of the honing devices against the razor blade is under the control of the operator.

In the accompanying drawings:—Figure 1 is a vertical longitudinal section of my improved honing machine, showing a razor clamped in the same. Fig. 2 is a top plan view of the machine. Fig. 3 is a transverse section thereof.

Like letters of reference refer to like parts in the several figures.

A is the base of the machine which is preferably provided in its under side with a clamp for attaching it to the top of a table or other projecting support, the clamp shown in the drawings consisting of a rearwardly extending hook or arm *a* and a thumb screw *a'* carried by the hook and bearing against the under side of the table-top or support.

B is a holder which is arranged on the rear portion of the base and in which the razor is clamped with its edge upward. This holder consists of a post or standard bifurcated at its upper end to form a seat for the razor shank, and horizontal clamping screws *b* passing through the jaws of the post and bearing against opposite sides of the shank, as shown in Fig. 2. The rear portion of the razor shank passes through the eye *c* of a bolt *c'*, which is vertically movable in a post or standard C arranged on the base in rear of the holder B. This eye bolt passes through a vertical opening extending through the standard C and the base, and its projecting lower portion is provided with a screw nut *c²* which bears against the under side of the base. The eye bolt *c'* prevents the shank of the razor from rocking upward on the holder, and it enables

the same to be drawn downward for giving the blade the desired inclination, by turning the screw nut of the eye bolt in the proper direction.

d is an adjusting screw arranged in the rear standard C, behind the eye bolt *c'* and bearing at its upper end against the under side of the razor shank, the screw being preferably formed at its upper end with a grooved head, in which the rear end of the shank is seated, as shown in the drawings. The adjusting screw *d* prevents the razor shank from rocking downward in the holder and it may also be employed for tilting the blade downward, at the desired angle, this being accomplished by loosening the eye bolt *c'* and screwing the adjusting screw upward by means of the knob at its lower end.

E E represent hones or honing stones arranged on opposite sides of the razor blade and capable of reciprocating lengthwise of the blade for sharpening the same. These hones are secured in clamps or holders *f* of any suitable construction which are attached to reciprocating carriers G. The latter slide upon longitudinal guide rods H arranged in front of the razor holder B, on opposite sides of the blade, and are supported at their ends in upright lugs or standards *h* rising from the base. Each of these carriers is provided at its lower end with a hub or sleeve *g* which surrounds the adjacent guide rod and which permits the carrier to swing laterally toward and from the razor blade, as well as to slide upon the guide rod. Each carrier is formed on its outside with a handle or enlargement *g'* for operating the same.

The guide rods of the carriers are inclined from the heel toward the toe of the razor blade, as shown, so that the hones are drawn obliquely over the edge of the blade, thereby producing the necessary shearing action of the hones. The hone clamps *b* are preferably pivoted to the carriers at their upper ends by pins *f'* arranged transversely of the carriers to permit the hones to assume the proper angle to bear against the sides of the thickened razor back, as well as against its cutting edge.

i represents springs secured at their upper ends to the carriers and bearing at their free lower ends against the adjacent sides of the hone clamps, as shown in Fig. 3, whereby the

hones are yieldingly pressed against the sides of the razor back and at the same time permitted to accommodate themselves to the thickness of the back.

5 *j* represents adjustable stops or collars arranged on the guide rods H for limiting the forward stroke of the hone carriers in accordance with the length of the razor blade to be sharpened. These stop collars are provided
10 with set screws for clamping them in place on the guide rods.

In using my improved machine, the operator clamps and centers the razor in the holder B by means of the clamping screws *b* and ad-
15 justs the blade at the desired inclination by means of the eye bolt *c'* and adjusting screw *d*. He then grasps one of the hone carriers with each hand and reciprocates the hones in opposite directions, pressing the same against
20 the razor blade during their forward movement and moving them laterally out of contact with the blade during their backward movement. By this operation the blade is honed alternately on opposite sides without interfer-
25 ence of the hones. As the hones move downward at an angle to the cutting edge of the razor, as well as forward, the desired shearing action is obtained throughout the length of the blade, and as the hones bear against the
30 sides of the razor-back, they are always presented to the cutting edge of the razor at the proper angle.

The operator has full control of the hones and can therefore exert a greater or less
35 pressure upon them, as the condition of the blade may require. This is an important advantage in sharpening a dull razor as it enables the operator to apply the hones with a firm pressure at first and gradually diminish
40 the pressure as the blade becomes sharpened, thus saving the time and labor required in honing a dull razor with machines in which the pressure of the hones is dependent upon a spring having a light uniform tension.

45 The hones may be swung outward at a considerable distance from each other, as shown in Fig. 2, and there is therefore no liability of striking the edge of the razor blade against the hones and nicking the same in adjusting
50 the same in the machine. This wide clearance of the hones also gives the operator access to the blade for feeling of its edge from time to time.

55 The pivoted carriers permit the faces of the honing stones to be brought into contact

and any uneven wear of the stones can therefore be readily removed without removing the stones from the machine by grinding them against each other, after wetting them.

My improved machine, while efficient in 60 operation and compact in construction comprises but few parts and it can therefore be produced at small cost.

It is obvious that my machine may be constructed of different sizes for sharpening the 65 blades of butchers' knives and other knives which require a sharp cutting edge.

I claim as my invention—

1. The combination with a base, of a razor holder or support arranged on said base, longitudinal guides arranged in front of said 70 holder or support on opposite sides of the razor blade clamped in the holder and separate hones capable of independent reciprocating movement on said guides, substantially as set forth. 75

2. The combination with a base and a holder or support arranged on said base, of inclined guide rods arranged in front of said holder, reciprocating carriers mounted on said guide 80 rods and capable of independent movement thereon and hones attached to said carriers, substantially as set forth.

3. The combination with a base, and a razor holder arranged thereon, of longitudinal 85 guides arranged in front of said holder, and reciprocating hone carriers moving on said guides and capable of swinging laterally toward and from the razor blade clamped in said holder, substantially as set forth. 90

4. The combination with a base and a razor holder arranged thereon, of longitudinal guide rods arranged in front of said holder, carriers sliding upon said rods, hone clamps pivoted at their upper portions to said car- 95 riers and springs which resist the outward movement of the lower portions of said clamps, substantially as set forth.

5. The combination with a base and a razor holder or support arranged thereon, of an eye 100 bolt arranged in rear of said holder or support and engaging with the shank of the razor and an adjusting screw bearing against the shank of the razor, substantially as set forth.

Witness my hand this 30th day of March, 105 1894.

WILLIAM H. MATHER.

Witnesses:

HENRY GOLDSMITH,
WILLIAM CROSS.