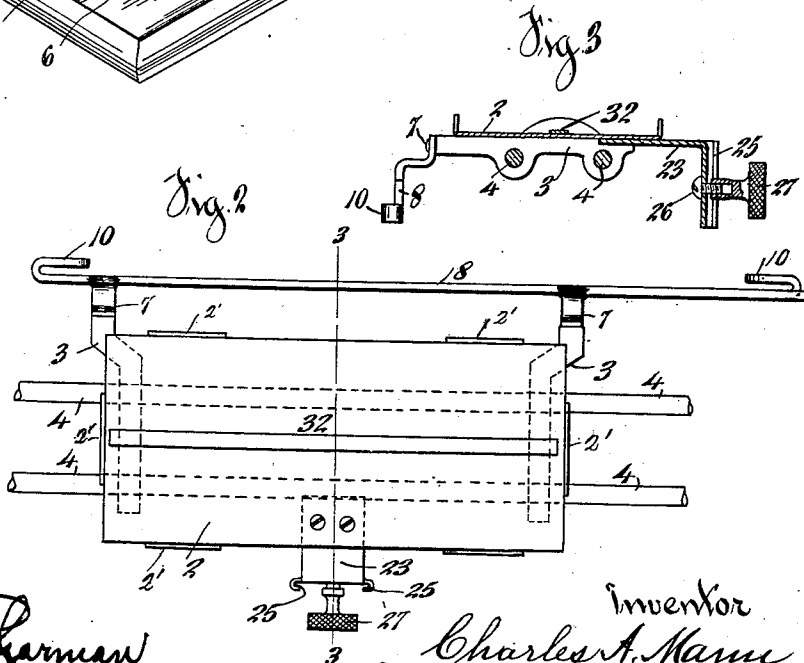
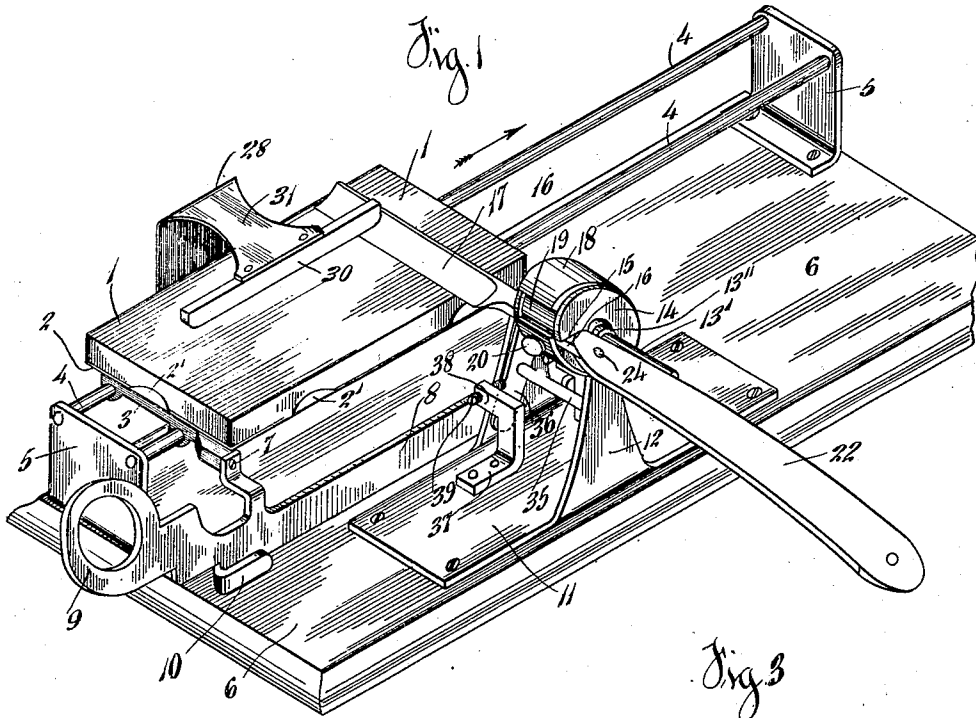


C. A. MANN.
MACHINE FOR HONING RAZORS.
APPLICATION FILED AUG. 31, 1910.

991,865.

Patented May 9, 1911.

2 SHEETS—SHEET 1.



Witnesses
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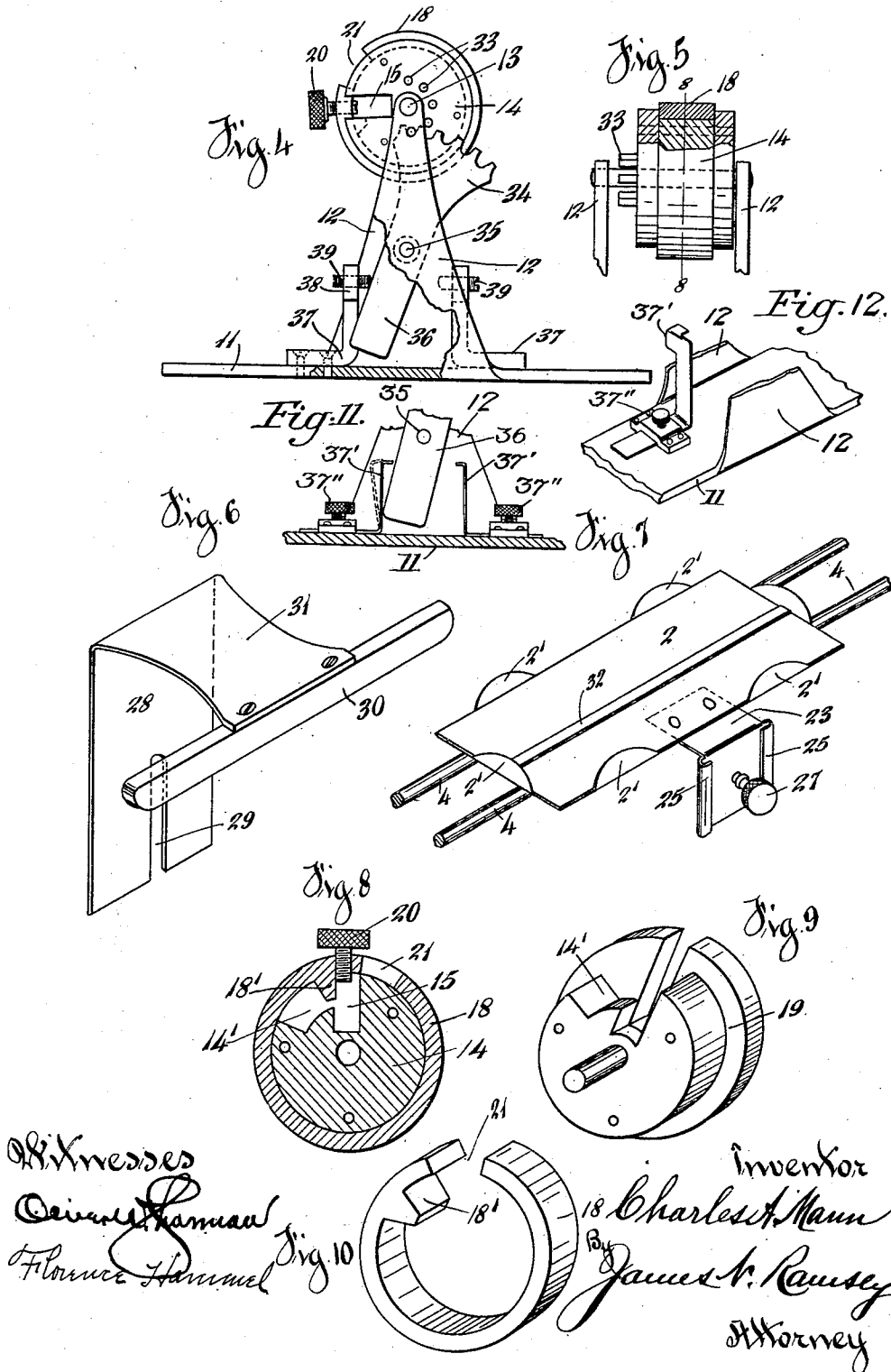
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UNITED STATES PATENT OFFICE.

CHARLES A. MANN, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-HALF TO HARRIE D. CRANE, OF CINCINNATI, OHIO.

MACHINE FOR HONING RAZORS.

991,865.

Specification of Letters Patent.

Patented May 9, 1911.

Application filed August 31, 1910. Serial No. 579,892.

To all whom it may concern:

Be it known that I, CHARLES A. MANN, a citizen of the United States, and resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Machines for Honing Razors, of which the following is a specification.

My invention relates to machines for honing razors, and particularly to hand operated machines for such purpose.

The object of my invention is to provide a simple, inexpensive, efficient and easily operated device for honing razors by which the most inexperienced person is enabled to hone a razor with greater ease and facility, efficiency and accuracy than can be done by an expert in honing razors by hand without the use of such machine.

Another object of my invention is to insure uniform bearing upon the stone throughout the length of the surface of the blade to be sharpened, and accuracy and certainty in the movements of the stone with relation to the razor blade whereby it is perfectly sharpened with greater rapidity and ease than otherwise.

Another object of my invention is to insure the even wear of the hone and razor blade as well as operating upon the entire length of the blade at each movement of the hone.

With these and other objects in view, my invention consists briefly in a device comprising a slidably mounted honing stone, a pivotally mounted razor, means for alternately moving said stone and said razor, whereby the stone is brought into operative engagement with said razor during each movement of the stone and said razor is automatically turned between each movement of the stone to alternately bring its sides into operative engagement with the stone.

My invention also consists in certain novel parts and combination of parts and in the details of construction and arrangement as herein set forth and claimed.

In the accompanying drawings, which serve to illustrate the construction and use of my invention: Figure 1 is an isometric view of a device constructed in accordance with my invention. Fig. 2 is a plan view

looking down upon the carrier for the honing stone. Fig. 3 is a section taken on the line 3—3 of Fig. 2. Fig. 4 is a view in elevation showing the support and holder for the razor, parts being broken away for the sake of clearness. Fig. 5 is a side elevation of the razor holder shown in Fig. 4, parts being broken away. Fig. 6 is a perspective view of the spring mounted tension or pressure bar. Fig. 7 is a perspective view of the carrier for the honing stone. Fig. 8 is a section taken on the line 8—8 of Fig. 5. Fig. 9 is a perspective view of the carrier with one side removed. Fig. 10 is a perspective view of the slotted sleeve. Fig. 11 is an elevation showing a modification of the brackets for limiting the movement of the stem of the segmental gear, and Fig. 12 is a perspective view illustrating the same feature.

In the embodiment of my invention, as illustrated in the drawings, which show a preferred construction, 1 represents a honing stone which rests upon a slidable carrier 2 having bearing members 3 slidably engaging rods 4, which rods are supported by brackets 5 at each end of the machine mounted upon a base 6. Connected to the bearing members 3 at 7 of the hone supporting frame is an operating member 8 having a handle 9 thereon. The operating member 8 is provided with cams or extensions 10 for actuating a pivoted razor holder.

Mounted on the base 6 is a bracket 11 provided with supports 12 and having a pivot 13 adapted to carry the razor holder 14. The razor holder 14 is provided with a transverse slot 15 adapted to receive a shank 16 of the razor 17. The razor holder 14 is also provided with a slidable sleeve 18 which is mounted in the channel 19 of the holder and has mounted therein a thumb screw which is adapted to clamp the razor firmly in the slot 15 of the holder 14. The sleeve 18 is provided with a slot 21 to correspond in size and shape with the slot 15 of the holder so that when it is desired to place the razor in position in the holder the slot 21 of the sleeve 18 is adjusted to coincide with the slot 15 of the holder, thus permitting the shank 16 of the razor 17 to enter, when the sleeve is moved circumferentially of the holder until the thumb screw 20 therein is adapted

to be engaged with the edge of the razor shank to clamp it firmly in the holder, as shown in Fig. 1.

In order to adapt the razor holder to receive razor shanks of varying sizes, I form the slot 15 sufficiently large to receive the shank of any razor and in order to hold the shank securely from lateral or sidewise movement in the slot, I provide a lug 18' on the under side of the sleeve 18 near the end provided with the thumb screw 20, and at a point which will permit the thumb nut to engage the razor shank and clamp it in position. An arc-shaped groove 14' is provided on the periphery of the holder adjacent the slot 15 for the purpose of receiving the lug 18'. When it is desired to remove the razor simply reverse the operation by loosening the thumb screw, moving the sleeve around circumferentially until the slot 21 coincides with the slot 15 in the holder 14 when the razor can be readily removed. The pivot 13 is preferably extended outwardly a considerable distance to form a support 13' for the razor handle 22. The support 13' is preferably provided with a flattened surface adjacent the razor holder to engage its rear edges and is also preferably provided with a boss, collar or enlargement 13'' to engage the extreme inner end of the handle which is usually tapered and reduced in size, thus preventing the handle from moving any appreciable distance upon its pivot 24 and holding the handle in substantially fixed position and in alinement with relation to the razor blade. Thus, as shown in Fig. 1, the handle 22 bears against said support and moves therewith and with the razor blade.

Mounted on the side of the carrier 2 for the honing stone 1, I provide a bracket 23 having vertically disposed flanges 25 and a screw 26 adapted to receive a thumb nut 27. A flat angle-shaped leaf spring 28 having a slot 29 in one end thereof is adapted to engage said flanges and thumb nut and be held in adjusted position thereby, the screw 26 being adapted to traverse said slot 29. A horizontal bar of hardened steel 30 preferably having curved ends is attached at the end of the upper horizontal portion 31 of the leaf spring 28 and is arranged to extend longitudinally over the honing stone 1 such distance as it is desired to have the razor blade engage the stone during the movement of the stone in either direction. This forms a spring bearing member adapted to hold the razor blade firmly in position against the stone while the stone is moving in engagement with the razor blade and this spring pressure member may be adjusted vertically by means of the thumb nut to accommodate and adapt itself to receive beneath it razor blades of varying thickness as well as to secure the desired tension or pres-

sure or varying pressure upon razor blades of the same thickness, it only being necessary to make this adjustment by means of the thumb nut. It is essential to place this hardened bar of steel below the line of the thickest part of the razor blade, as shown in Fig. 1. Thus, as the stone is being moved in the direction of the arrow, the hardened bar of steel will pass over the razor blade and the tension in the spring 28 will force the edge of the razor blade against the stone 1 and keep it in constant contact therewith. In order to maintain the razor blade and stone in proper relative position, under all conditions, such as a high point in the razor blade, I provide means on the carrier 2 for permitting the entire stone to tilt to conform to the exact angle of the razor blade. This is accomplished by providing the carrier 2 with a spline or small feather 32 which is fastened centrally and longitudinally on the bottom of the carrier so that the stone will rest upon the spline 32 and tilt laterally to either side thereof to accommodate itself to the varying conditions of the razor blade or stone.

The carrier 2 is provided with flanges 2' extending upwardly at its sides and ends to hold the stone thereon. The razor holder 14 is provided on its inner flat surface or end with a series of pins 33 arranged in the arc of a circle and adapted to mesh with a vertically disposed segmental gear 34 mounted on a pivot 35 and having a stem 36 adapted to contact with the cams 10 of the operating member 8.

In order to prevent the razor blade from coming in contact with the stone with too great a force I provide brackets 37 which are fastened to the bracket 11 and have laterally projecting lugs 38 which have mounted therein set screws 39 adapted to limit the movement of the stem 36 of the segmental gear 34 thereby allowing adjustment or limiting of the movement of the razor holder 14. Thus, the movement of the stem 36 may be adjusted in order to prevent the razor blade from coming into sudden and forcible contact with the stone 1, thereby obviating the liability of breaking the razor blade. If desired the brackets may consist of springs 37' adjustably held in place by set screws 37''. The construction illustrated in Figs. 11 and 12 permits of some yielding of the bracket when the stem 36 comes in contact therewith thus avoiding any jarring or sudden impact of the parts. It also allows the edge of the razor to come into more gradual contact with the stone after being turned at each end of the stroke.

The operation of my machine is extremely simple and is as follows: Place the razor in the razor holder in the manner heretofore described, bringing the razor blade to the position indicated in Fig. 1 which is partly

under the spring pressed bar 30, the edge of the blade being disposed in the direction opposite to the movement of the stone and toward said bar. The operator, then, by means of the handle 9, imparts a longitudinal reciprocating movement to the hone by pushing the carrier back and forth upon the rods 4. Near the end of each movement of the carrier, one of the cams 10 engages the stem 36 of the segmental gear 34 and actuates said gear in mesh with the segmentally disposed pins 33 upon the razor holder, thereby turning said holder upon its pivot 13 until said stem engages on its opposite side one of the set screws 39 when the position of the razor is thereby reversed ready for the return movement of the hone and so on continuously until the operation of honing the razor has been completed. It will be observed that near the end of each movement of the stone the position of the razor blade is reversed and brought into operative engagement with the surface of the stone before the next movement of the stone and so on.

It will be seen that the pressure bar can be easily removed and the honing stone lifted out for the purpose of cleaning or reversing the stone, thus permitting of the use of either side of the stone as desired.

It is quite evident from the foregoing description that my machine is simple and inexpensive and one which has many advantages. One great advantage is the fact that the razor may be honed with the least possible waste due to the fact that the razor is bound to keep the uniform bevel on the edge which is very often difficult to obtain when honing a razor by hand. The machine is so simple in construction and operation that even a child or blind person can operate it and still obtain a perfect edge on the razor blade.

Many modifications of my invention may be made without departing from its spirit and scope, and I do not wish to be confined to the exact details shown.

What I claim as new and desire to secure by Letters Patent is:

1. A machine for honing razors comprising a longitudinally reciprocating carrier, a honing stone mounted thereon, a pressure bar disposed above said honing stone, a razor holder mounted adjacent said carrier and adapted to hold a razor blade in contact with said stone, and means for imparting an alternating rotary motion to said razor holder, whereby the position of said razor is reversed at each longitudinal movement of the stone.

2. In a machine for honing razors, a longitudinally reciprocating carrier, a honing stone mounted thereon, an operating member on said carrier, cams on said operating member, a razor holder, supports therefor,

pins on said holder, a segmental gear adapted to engage said pins and having a stem adapted to engage and be actuated by said cams to rotate said holder alternately in opposite directions. 70

3. In a machine for honing razors, a longitudinally reciprocating carrier, a honing stone mounted thereon, an operating member on said carrier, cams on said operating member, a razor holder, supports therefor, pins on said holder, a segmental gear adapted to engage said pins and having a stem adapted to engage and be actuated by said cams to rotate said holder alternately in opposite directions, and adjustable stops to limit the movement of said razor holder. 75 80

4. In a machine for honing razors, a longitudinally reciprocating carrier, a honing stone mounted thereon, a razor holder, means for reversing the position of the razor blade with relation to the stone, and a spring pressure member mounted above said stone and adapted to be adjusted vertically, substantially as set forth. 85

5. In a machine for honing razors, a longitudinally reciprocating carrier, a honing stone mounted thereon, a bracket on said carrier, and a spring pressure member mounted on said bracket and adapted to be adjusted vertically thereon, substantially as set forth. 90 95

6. In a machine for honing razors, a longitudinally reciprocating carrier, a honing stone mounted thereon, a bracket on said carrier, and a spring pressure member mounted on said bracket and having curved ends, substantially as set forth. 100

7. In a machine for honing razors, a longitudinally reciprocating carrier, a honing stone mounted thereon, means for holding the razor blade in operative engagement with the stone during its movements relative to said razor blade, a bracket on said carrier having vertical flanges, a screw and thumb nut and a spring pressure bar mounted upon a spring member slotted to take over said screw and be held in adjusted position vertically by said thumb nut, substantially as set forth. 105 110

8. In a machine for honing razors, a longitudinally reciprocating carrier having flanges thereon to hold a honing stone in position, a longitudinal spline disposed centrally of said carrier and adapted to receive a honing stone and permit of tilting movement thereof, and means for holding a razor in engagement with said stone while the latter is being reciprocated, substantially as set forth. 115 120

9. In a machine for honing razors, a base, brackets at each end of said base, rods supported on said brackets, bearing members engaging said rods, a carrier mounted on said bearing members, a hone mounted on said carrier, a spring pressure bar mounted 125 130

upon said carrier, a razor support mounted upon said base adjacent said carrier, a razor holder pivotally mounted on said support and having a razor mounted thereon, and
5 means for automatically reversing the position of said razor blade at each movement of the honing stone relative thereto, substantially as set forth.

10 10. In a machine for honing razors, a slidably mounted honing stone, a pivotally mounted razor holder, and means for alternately moving said stone and said razor

holder, whereby the stone is brought into operative engagement with said razor during each movement of the stone and said razor is automatically turned between each movement of the stone to alternately bring its sides into operative engagement with the stone.

CHARLES A. MANN.

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