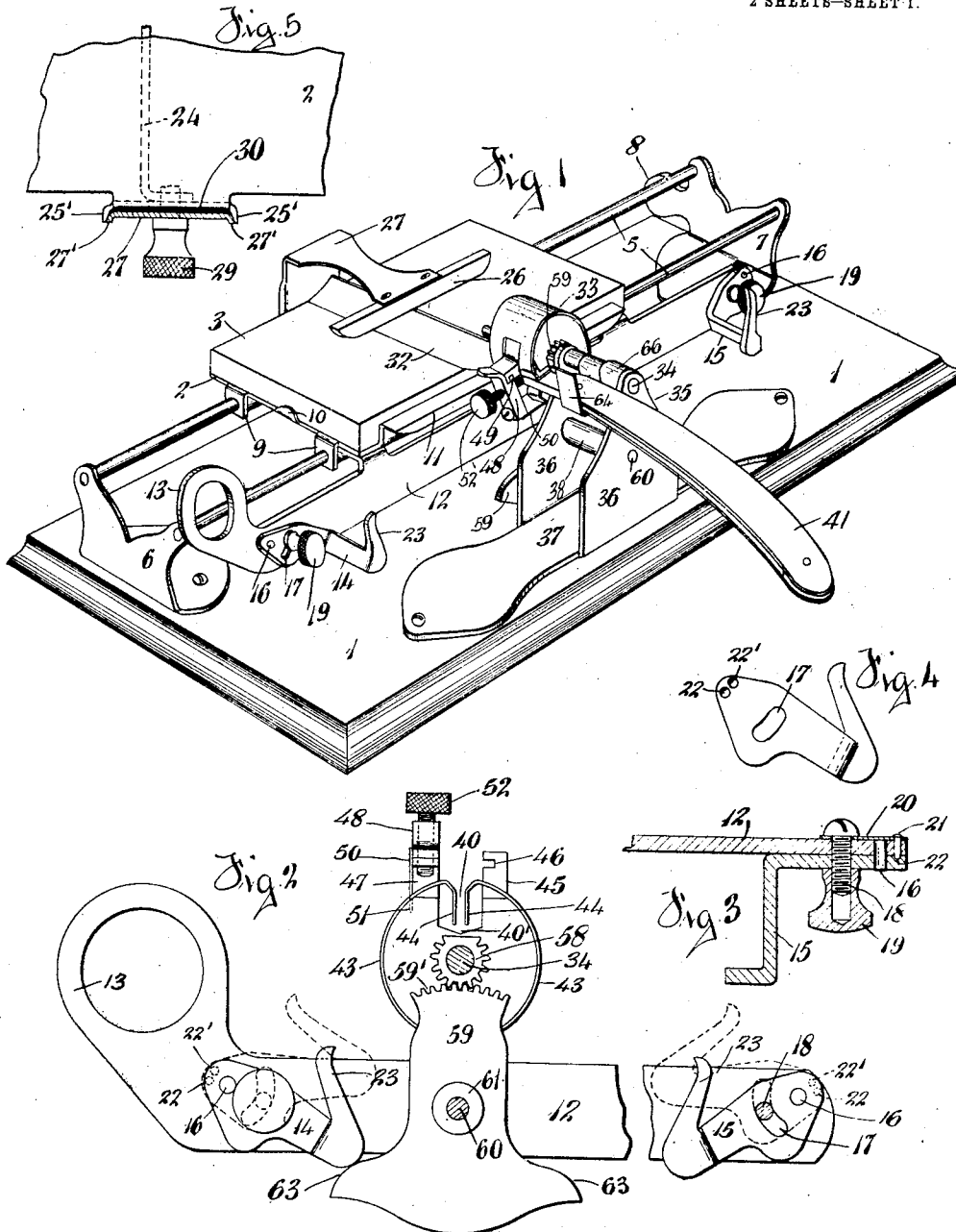


C. A. MANN.
MACHINE FOR HONING AND STROPPING RAZORS AND RAZOR BLADES.
APPLICATION FILED DEC. 7, 1911.

1,039,561.

Patented Sept. 24, 1912.

2 SHEETS—SHEET 1.



Witnesses
Oscar J. Mann
Goldie Gordon

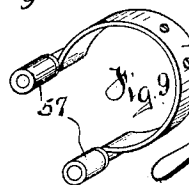
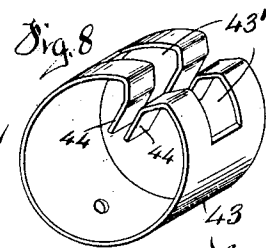
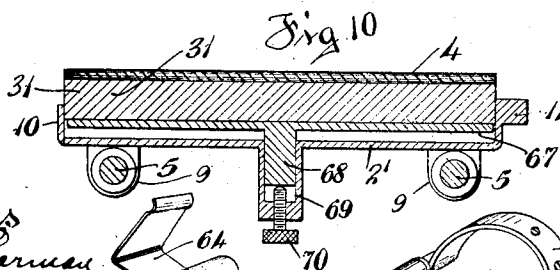
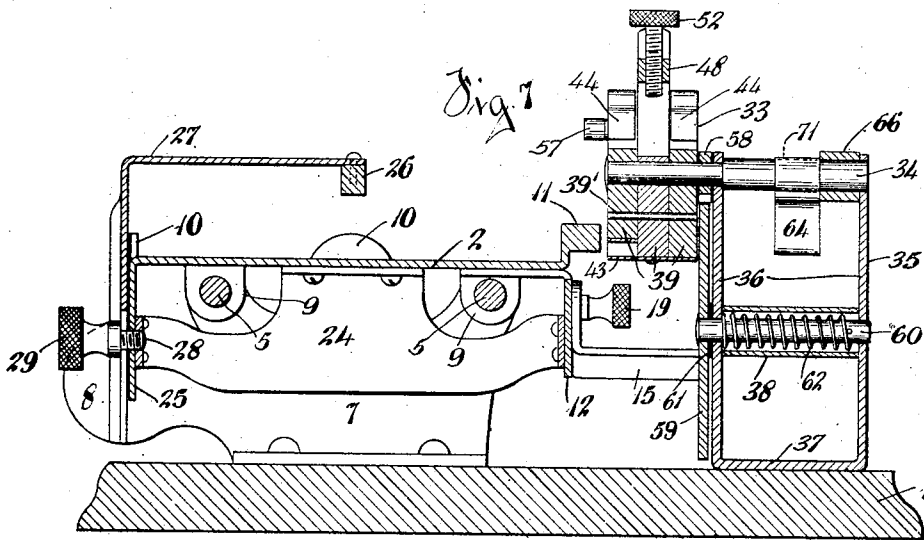
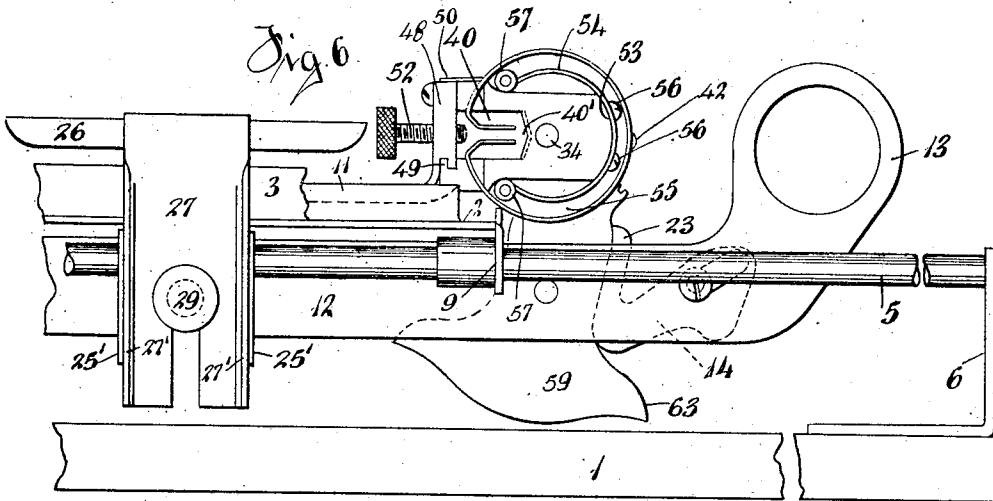
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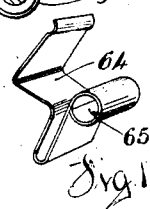
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2 SHEETS—SHEET 2.



Witnesses
Olive L. Mann
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UNITED STATES PATENT OFFICE.

CHARLES A. MANN, OF CINCINNATI, OHIO.

MACHINE FOR HONING AND STROPPING RAZORS AND RAZOR-BLADES.

1,039,561.

Specification of Letters Patent.

Patented Sept. 24, 1912.

Application filed December 7, 1911. Serial No. 864,348.

To all whom it may concern:

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

My invention relates to machines for honing and stropping ordinary razors and also razor blades for use in safety razors.

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

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

Another object of my invention is to insure the even wear of the hone or strop and razor or razor blade as well as operating upon the entire length of the blade at each movement of the hone or strop, and also to prevent the turning of the edge of the razor or razor blade.

With these and other objects in view, my invention consists in improvements in the carrier for the honing stone or strop, in means for centering and holding the razor or razor blade, in means for controlling the gear which controls the holder so as to reverse it both for honing and stropping, in means for holding the pressure bar, in means for firmly holding the razor handle, in means for holding the rack under tension, and in the details of construction as well as in the combination and arrangement of the several parts as herein set forth and claimed.

In the accompanying drawings, which serve to illustrate the construction, application and use of my invention: Figure 1 is a perspective view of a device constructed in accordance with my invention and show-

ing the razor in position for honing; Fig. 2 is a side elevation partly in section and partly broken away, showing the handle bar, rack and razor holder on an enlarged scale; Fig. 3 is a section on the line 3—3 of Fig. 2; Fig. 4 is a perspective view of one of the arms; Fig. 5 is a fragmentary top view showing the pressure bar in section secured to the supporting member by a thumb screw; Fig. 6 is a rear side elevation partly broken away; Fig. 7 is a transverse vertical section taken centrally through the device; Fig. 8 is a perspective view of the horseshoe spring forming part of the razor holder; Fig. 9 is a perspective view of the centering spring; Fig. 10 is a vertical section showing a razor strop and means for vertically adjusting the same; and Fig. 11 is a perspective view of the spring clamp.

In the embodiment of my invention, as illustrated, and which shows a preferred construction, 1 represents the base upon which the several parts of the machine are mounted. A slidable carrier 2 for the sharpening members comprising the hone 3 or strop 4 is mounted upon the rods 5 secured upon supports 6 and 7 which are mounted upon and near the ends of the base 1. I preferably provide a handle 8 upon the support 7 by which the machine may be held by one hand while being operated by the other hand. The carrier 2 is provided on its under side with bearings 9 slidably mounted upon said rods 5 and upon its upper side it is provided with flanges 10 extending upwardly therefrom to hold the hone or strop in position thereon. Upon the inner edge of the carrier I provide an upwardly extending angular auxiliary pressure bar 11 which is beveled or tapered on the lower side at each end. Secured also to the inner lower end of the carrier is a handle bar 12 having a handle 13 at one end and carrying adjustable actuating arms 14 and 15 near its respective ends. These actuating arms are mounted upon pivots 16 and are each provided with an arc-shaped slot 17 adapted to receive a screw threaded stop or pin 18 upon which a thumb nut 19 is adapted to be screwed. A flat spring 20 is secured upon the pin 18 and rests against the side of the handle bar 12. A lug 21 is secured near the end of said spring and projects through an opening in said handle bar and is also adapted to project into curved or tapering depressions 22 and 22' in the actuating arms

14 and 15 respectively to facilitate the adjustment of said arms in either raised or lowered position by snapping the lug 21 respectively into depressions 22 and 22' respectively and thus relieve the user from the necessity of repeated trial in adjusting the arms to proper position to perform their functions. When so adjusted the thumb nut 19 is secured tightly against said arms.

When the arm 14 or 15 is in its lower position the lug 21 will enter the depression 22 and when in its upper position said lug will enter depression 22'. The actuating arms 14 and 15 extend parallel with said handle bar and project at right angles thereto and are each provided with an upwardly extending finger 23 upon its free end. These fingers preferably taper to a point at the upper end. A transverse brace 24 is secured at its central part to and beneath the carrier 2, at one end and to the handle bar 12 and at the other end to a supporting member 25 projecting downwardly from the carrier 2 for holding the adjustable pressure bar 26 for the purpose of securely holding said parts in fixed and firm relation with each other. The adjustable pressure bar 26 is supported upon the end of an angular spring member 27 which is slotted at its lower end to receive a threaded pin 28 which is provided with a thumb nut 29 to hold said member at any height desired. The supporting member 25 is provided upon each edge with a tapering flange 25' forming a channel 30 within which the tapering edges 27' of the slotted member 27 extend and are adapted to be moved vertically when adjusting the same.

The vertical slotted member 27 is placed over the pin 28 between the flanges 25' and is securely wedged in position by turning the thumb nut tightly against the same thereby firmly and securely holding said angular bar in position and by reason of said flanges in connection with said pin there is no danger of the pressure bar being shifted out of its proper horizontal position due to its frequent engagement with the razor.

The strop 4 is mounted upon a rigid base 31 which is adapted to rest upon the flanged carrier 2, the flanges 10 thereof holding the same in place during the operation of stropping the razor or razor blade 32.

The razor or razor blade 32 is adapted to be securely held by means of the holder 33 which is pivotally mounted upon the shaft 34 at the upper end of support 35 having two uprights 36 formed of flat members spaced apart by its base 37 and spacing sleeve 38.

The razor holder 33 consists of disks 39 suitably secured together by pins 39', said razor holder being mounted upon said shaft between the support 35 and carrier 2 and provided with a slot 40 adapted to receive

the shank 41 of the razor 32. Said slot is V-shaped at its inner end 40' to assist in centering the razor shank and in holding same in such centered position when clamped by means of the set screw 52. Surrounding said disks and secured thereto by a rivet 42 is a centering spring 43 having its free ends provided with gripping flanges 44 which project into said slot. The ends of the centering spring 43 are provided with slots 43' to receive the lugs 45 and 47 respectively, which lugs, in connection with the rivet 42 hold said centering spring in proper position upon the disks 39. Said lug 45 is mounted upon one side of the slot 40 and is provided with a groove 46 upon one side thereof. Lug 47 is mounted upon the other side of said slot 40 and a latch 48 is pivotally mounted thereon and is provided with a projection 49 adapted to enter said groove 46 to hold it in engagement with the lug 45. A flat spring 50 bears against the flat end and side respectively of said latch to hold it in either open or closed position, said spring being mounted adjacent the lug 47, and projecting into a slot 51 in the razor holder 33. Said thumb screw 52 projects downwardly through the latch 48 for the purpose of engaging the shank 41 of the razor or holder for razor blades to hold the same securely within the razor holder.

It will be noted that the gripping flanges 44 are spaced apart and are placed some distance from each wall of the slot 40 to permit razor shanks or holders of varying thicknesses to be inserted therein. The centering spring being circular, the pressure upon the shanks will be equal or the same upon each side regardless of the thickness of the shank.

The periphery of the outer disk 39 is cut away to form support 53 for a horseshoe spring 54 and to provide a space 55 for said spring. Said spring 54 is secured upon said support 53 by a rivet 56 in the bottom of said support, and each of the free ends of said horseshoe spring 54 is provided with a laterally extending roller 57 which is adapted to project in a path beneath the auxiliary pressure bar 11. Each of said rollers 57 is adapted to pass beneath the auxiliary pressure bar 11 to draw the razor blade into contact with the honing stone to permit it to pass beneath the pressure bar and prevent the edge of the blade from coming into contact therewith.

A mutilated pinion 58 is fixed upon the shaft 34 between the support 35 and the holder 33 and is adapted to engage a segmental rack 59 which is pivotally mounted near its central part upon a shaft 60. A leather washer 61 is placed upon said shaft between said support and said rack and a coiled spring 62 surrounds said shaft within said spacing sleeve and exerts pressure to draw said rack tightly against said washer

in order to prevent the razor holder from oscillating too freely.

The upper end of said rack 59 is provided with teeth 59' to engage and actuate the mutilated pinion 58. The lower end of said rack 59 tapers outwardly and downwardly to form tapering or cam surfaces 63 to provide a gradual contact of said cam surfaces with the actuating fingers 23 whereby the lower ends of said fingers gradually engage said cam surfaces 63 to throw said rack from one side to the other and the upper ends of said fingers engage the upper edge of said rack and form a stop to prevent the razor holder from turning too far so that in turning the razor at the end of each stroke the blade will be held a short distance from the stone until it is gradually drawn downwardly by means of the rollers 57 passing beneath the auxiliary pressure bar 11 as above described.

I pivotally mount upon the razor holder shaft 34 between the uprights 36 in an annular channel 71 a spring clamp 64 for the purpose of holding the handle of the razor from flopping back and forth relatively to the shank of the razor. Said spring clamp is formed with an eye 65 through which the shaft 34 extends and is bent upwardly substantially U-shaped and then outwardly and upwardly at right angles, leaving the end free to spring over and clamp razor handles of varying sizes and shapes. Also mounted upon said shaft 34 is a roller bearing 66 against which the handle of the razor is adapted to bear in its movements during the operation of honing the razor and thereby prevent the handle from engaging the upper end of the support, thus protecting the handle from damage.

When it is desired to adjust the honing stone or strop vertically relatively to the carrier this may be accomplished by means of the adjustable support 67 mounted on the carrier 2 and adapted to receive the honing stone or strop. Said support is provided with a stem 68 adapted to project into a socket 69, through the lower end of which an adjusting screw 70 extends and is adapted to bear against the lower end of said stem and by turning said screw said support may be vertically adjusted to any position desired.

The operation of the machine is substantially as follows: For honing a razor simply lay the honing stone 3 upon the carrier 2, adjust the pressure bar 26 to the proper height depending upon the particular thickness of the razor and height of the honing stone, turn the latch 48 to the position shown in Fig. 2, insert the shank of the razor between the flanges 44 and turn the latch to closed position as shown in Fig. 1, screwing the thumb screw 52 into position upon the shank thereby securely holding said shank,

then draw the spring clamp 64 over the handle to hold it from flopping. Set the arms 14 and 15 in the lower position or that shown in Fig. 2 and push the handle 13 back and forth with the right hand from one end to the other of the rods 5 holding the machine firmly with the handle 8. As the carrier moves across in either direction at the end of the stroke the lower end of the finger strikes the lower end of the cam and throws the upper end toward said finger until the upper end of the finger engages the upper end of said rack thus through rack 58 turning the blade holder shaft until the blade is reversed into position to rest upon the hone with its edge opposed to the direction of motion of the hone in the succeeding stroke and holds it firmly and prevents the razor from turning too far and striking the hone when turning, holding the same in said position until the carrier is drawn in the opposite direction when the razor is drawn gradually and gently downwardly by one of the rollers 57 on the horseshoe spring 54, said roller engaging beneath the auxiliary pressure bar 11, and together with the pressure bar 26 holding the razor firmly upon the stone. The auxiliary bar holds the edge of the razor upon the stone while the pressure bar 26 bears against the side of the back of the razor blade so that said blade is drawn tightly against the stone during its movements back and forth over the stone thereby causing uniform pressure throughout its entire length and throughout its movements upon the stone, insuring a uniform sharpening of the blade from end to end. After completing the operation of honing simply remove the honing stone 3 and insert the strop 4 in place upon the carrier. Also unscrew the thumb nuts 19 and push the arms 14 and 15 to their upper position, as shown by dotted lines in Fig. 2, securing them in that position by the thumb nuts 19. The fingers in this position will strike the upper edge of the rack instead of the lower edge thereby pushing the rack in the direction the carrier is moving and rotating the holder in the opposite direction so that the back of the razor will travel across the strop first instead of the thin edge of the blade as in honing.

When it is desired to remove the razor simply reverse the operation of placing the razor in position in the holder.

My invention is capable of some modification in the details of construction and arrangement without departure from the spirit or scope thereof.

I claim:

1. A machine for honing and stropping razors comprising a base, supports thereon, rods upon said supports, a carrier slidably mounted on said rods, a sharpening member on said carrier, a pressure bar adjustably

mounted above said sharpening member, an auxiliary pressure bar on said carrier at one side of said sharpening member, a razor holder and means on said razor holder adapted to engage said auxiliary bar and draw the edge of the razor blade into engagement with the sharpening member when said sharpening member is reciprocated relatively to said razor blade, substantially as set forth and for the purpose specified.

2. A machine for honing and stropping razors comprising a base, a longitudinally reciprocating carrier, a sharpening member mounted thereon, a pressure bar disposed above said sharpening member, a razor holder mounted adjacent said carrier, an auxiliary pressure bar on said carrier at one side of said sharpening member and spring mounted bearings on said razor holder adapted to engage said auxiliary pressure bar and hold the razor blade in engagement with the sharpening member, substantially as set forth and for the purposes specified.

3. A machine for honing and stropping razors comprising a longitudinally reciprocating carrier, a sharpening member mounted thereon, a pressure bar disposed above said sharpening member, a razor holder mounted adjacent said carrier and adapted to hold a razor blade in contact with said sharpening member, a gear fixed adjacent said razor holder, a rack adapted to engage and actuate said gear and adjustable fingers upon said carrier adapted to engage said rack to give said holder an alternating reciprocating motion whereby the razor blade is turned at the end of each reciprocating movement of the sharpening member ready for the next operation, substantially as set forth and for the purposes specified.

4. A machine for honing and stropping razors comprising a longitudinally reciprocating carrier, a honing stone mounted thereon, a pressure bar disposed above said sharpening member, a razor holder mounted adjacent said carrier and adapted to hold a razor blade in contact with said stone, a rack engaging said holder and fingers upon said carrier adapted to engage said rack to throw said holder in alternating rotary motions at the end of each stroke and an auxiliary pressure bar to hold it in such position during said stroke whereby the razor blade is held in contact with the sharpening member during its reciprocations, substantially as set forth and for the purposes specified.

5. A machine for honing and stropping razors comprising a longitudinally reciprocating carrier, a sharpening member mounted thereon, a handle for holding said machine in fixed position while being operated, a pressure bar disposed above said sharpening member, an auxiliary pressure bar at one

side of said sharpening member, a pivotally mounted razor holder, means for giving said holder an alternating rotary motion and means for holding said razor holder in fixed position during the movements of the carrier back and forth, substantially as set forth and for the purposes specified.

6. A machine for honing and stropping razors comprising a longitudinally reciprocating carrier, a sharpening member mounted thereon, a pressure bar disposed above said sharpening member, an auxiliary pressure bar at the side of said sharpening member, a handle for holding said machine in fixed position, a handle for operating said carrier, a pivotally mounted razor holder supported adjacent the side of said carrier, spring mounted rollers upon said carrier adapted to pass beneath said auxiliary pressure bar and in engagement therewith whereby said razor holder is held in fixed position during the movements of the carrier, substantially as set forth and for the purposes specified.

7. A machine for honing and stropping razors comprising a longitudinally reciprocating carrier, a sharpening member mounted thereon, a pressure bar disposed above said sharpening member, an auxiliary pressure bar at the side of said sharpening member, a pivotally mounted disk having a slot therein, a centering spring secured to and surrounding said disk and having its free ends extending and free to yield into said slot and means holding a razor clamped between the ends of said spring, substantially as set forth and for the purposes specified.

8. A machine for honing and stropping razors comprising a base, a longitudinally reciprocating carrier mounted thereon, a sharpening member mounted on said carrier, means for holding a razor blade in engagement with the sharpening member, an oscillating disk mounted adjacent and to one side of said carrier and having a slot therein V-shaped at the bottom, a centering spring secured to said disk at one side thereof and holding flanges on its free ends extending into said slot and spaced apart from each other and from the walls of said slot whereby razor shanks of varying thicknesses may be sprung between said holding flanges, a lug upon one side of said slot, a pivotally mounted latch mounted on the other side of said slot and adapted to open and close said slot for the insertion or removal of a razor blade, and a thumb screw mounted in said latch and adapted to clamp the razor shank firmly in said disk whereby the razor is securely held therein for honing or stropping, substantially as set forth and for the purposes specified.

9. A machine for honing and stropping razors comprising a base, a longitudinally

reciprocating carrier, a sharpening member mounted thereon, means for holding a razor in engagement with the sharpening member while the same is being reciprocated, a disk 5 mounted adjacent and to one side of said carrier and having a slot therein, a centering spring secured thereon and having gripping flanges extending into said slot and spaced apart from each other and from the 10 walls of said slot, a grooved lug upon one side of said slot, a lug upon the other side of said slot, a latch pivotally mounted upon said last mentioned lug and adapted to engage the groove in said first mentioned lug 15 and a thumb nut in said latch adapted to be screwed downwardly upon the shank of a razor whereby the same is firmly and securely held therein, substantially as set forth.

10. A machine for honing and stropping razors comprising a base, a carrier mounted longitudinally thereon, a sharpening member on said carrier, means for holding a razor blade in engagement with said sharpening member, a razor holder comprising a 25 pivotally mounted disk having a slot therein, spring flanges extending into said slot and adapted to engage a razor shank, a lug adjacent each wall of said slot, a latch pivoted to one lug and adapted to engage the other 30 lug and a spring adapted to bear against said latch to hold it in either open or closed position, substantially as set forth and for the purposes specified.

11. A machine for honing and stropping razors comprising a base, a longitudinally reciprocating carrier mounted above the same, a sharpening member upon said carrier, means for pressing the razor blade against said sharpening member, a razor 40 holder pivotally mounted to one side and adjacent said carrier and comprising a slotted disk, a spring surrounding said disk and secured thereto at its center, flanges upon the free ends of said disk extending 45 into said slot a short distance from each other and from the walls of said slot to permit razor shanks of varying sizes to be held therebetween, a lug upon one side of said slot projecting upwardly from said disk and 50 having a transverse slot and projection thereon, a lug upon the other side of said slot and having a latch pivotally mounted thereon, said latch having a projection and slot adapted to engage the slot and projection, respectively, of said first mentioned lug 55 to hold said latch from vertical movement and a thumb screw adapted to exert pressure upon a razor shank and hold the same firmly in said position, substantially as set forth 60 and for the purposes specified.

12. A machine for honing and stropping razors comprising a base, supports thereon, rods upon said supports, a reciprocating carrier mounted on said rods, a sharpening

member mounted on said carrier, means for 65 holding a razor in engagement with said sharpening member, a razor holder pivotally mounted adjacent and to one side of said carrier, a pinion fixed adjacent said carrier, a rack pivotally mounted and adapted to 70 mesh with said pinion, a handle bar secured to said carrier, adjustable arms adapted to alternately engage said segmental gear to actuate the same, to oscillate said holder 75 a limited distance and to stop said holder from turning too far thereby protecting the razor blade from striking the sharpening member while being turned at the end of each reciprocation, substantially as set forth 80 and for the purposes specified.

13. A machine for honing and stropping razors comprising a base, a longitudinally reciprocating carrier, a sharpening member mounted thereon, a razor holder pivotally 85 mounted adjacent said carrier, a pivotally mounted rack adapted to engage and actuate said holder, a handle bar secured to said carrier and having a handle at one end thereof, fingers pivoted to said bar and having a slot, 90 a screw secured to said handle bar and projecting through said slot to serve as a stop, a thumb nut on said screw, a spring secured to said stop and having a lug projecting through an opening in said handle bar and adapted to enter curved sockets or recesses 95 in said arm to hold the same in either lower or upper position when secured by the thumb nut, substantially as set forth and for the purposes specified.

14. A machine for honing and stropping 100 razors comprising a base, a longitudinally reciprocating carrier, a sharpening member mounted thereon, a razor holder, means for oscillating said razor holder and for holding said holder in fixed position during the re- 105 ciprocating movements of the carrier, a pressure bar having a vertical slotted member provided with tapering flanges, a supporting member having tapering flanges adapted to receive the tapering flanges of said slotted 110 member and a thumb nut adapted to wedge said slotted member into firm engagement with said supporting member, substantially as set forth.

15. A machine for honing and stropping 115 razors comprising a base, supports thereon, rods mounted in said supports, a carrier mounted on said rods, a sharpening member adapted to be held by said carrier, a supporting member having tapering flanges, a 120 screw projecting therefrom, a pressure bar, an angular support therefor having tapering flanges upon its lower part adapted to engage and fit between the tapering flanges on said supporting member and also having 125 its lower part slotted to receive said screw, a thumb nut on said screw and adapted to engage a slotted member and wedge it in

vertical adjustable position thereon, substantially as set forth and for the purposes specified.

16. A razor honing and stropping machine 5 comprising a base, a reciprocating carrier mounted thereon, a sharpening member held by said carrier, a pressure bar mounted above said sharpening member, an auxiliary pressure bar, a pivotally mounted razor 10 holder, spring mounted bearings adapted to engage said auxiliary pressure bar and hold said holder from oscillating during the reciprocating movement of the carrier, a gear fixed to said razor holder, a pivotally 15 mounted rack adapted to engage said gear, means for actuating said rack, a leather or fiber washer between said rack and its supporting member, and a spring adapted to hold said rack firmly against said washer

to prevent said holder from turning too 20 quickly, substantially as set forth and for the purposes specified.

17. A machine for honing and stropping razors comprising a base, a reciprocating carrier therefor, a sharpening member 25 adapted to be held by said carrier, means for holding a razor in engagement with said sharpening member, a pivotally mounted razor holder mounted upon a shaft, a roller 30 on said shaft adapted to engage the razor handle and prevent injury thereto while turning, and a catch adapted to hold said handle from flopping, substantially as set forth and for the purposes specified.

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Witnesses:

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