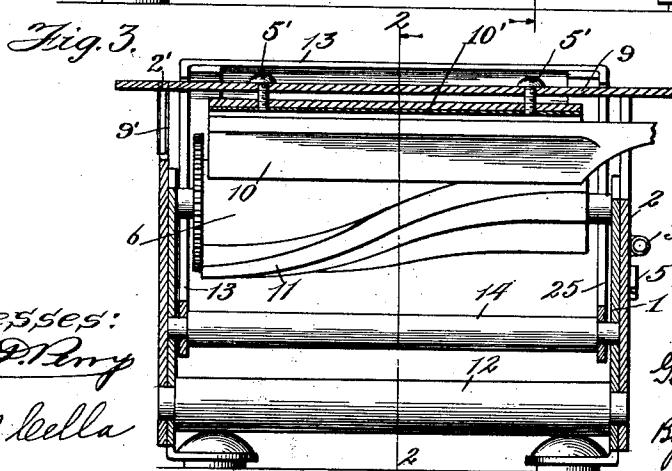
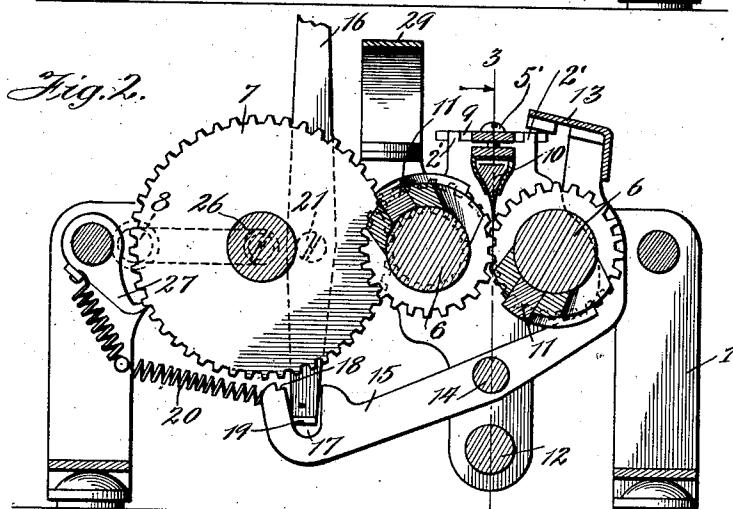
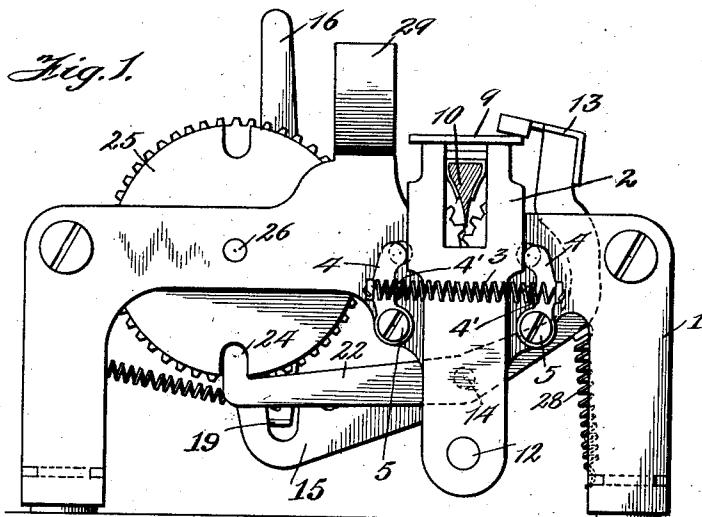


1,100,051.

G. BROWNING.
RAZOR SHARPENING MACHINE.
APPLICATION FILED JULY 25, 1908.

Patented June 16, 1914.

3 SHEETS—SHEET 1.



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3 SHEETS—SHEET 2.

Fig. 4.

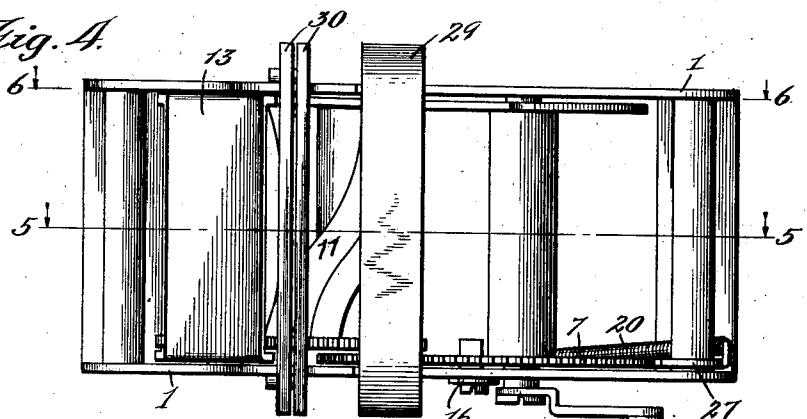


Fig. 5.

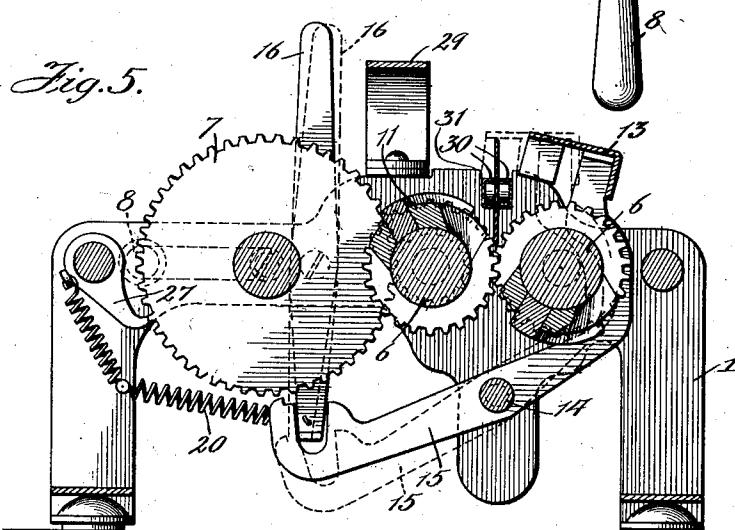
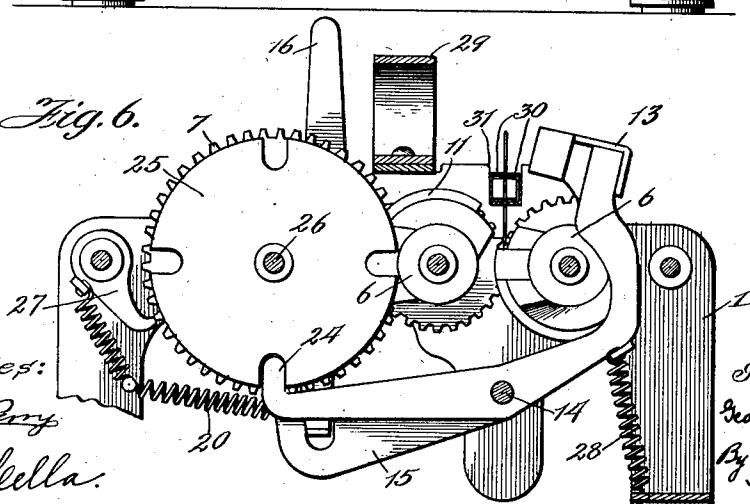


Fig. 6.



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G. BROWNING.
RAZOR SHARPENING MACHINE.
APPLICATION FILED JULY 26, 1908.

1,100,051.

Patented June 16, 1914.

3 SHEETS—SHEET 3.

Fig. 7.

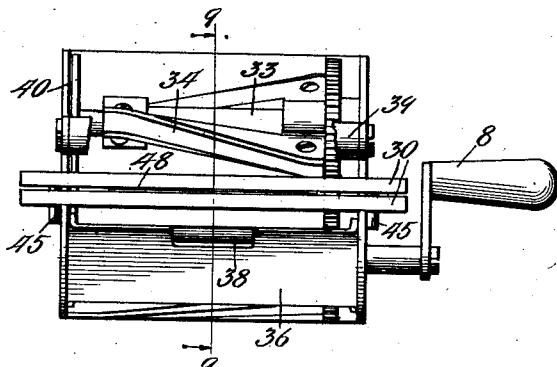


Fig. 8.

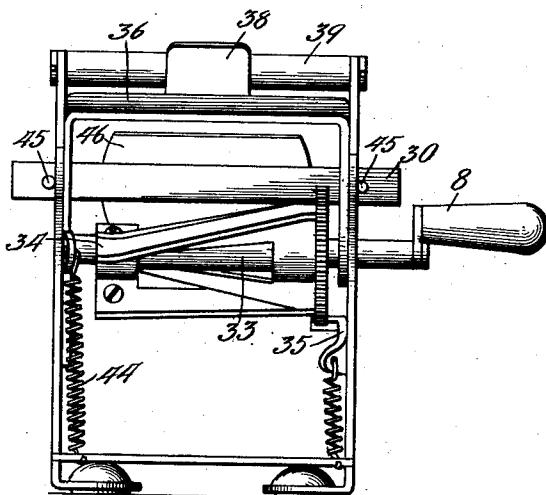


Fig. 9.

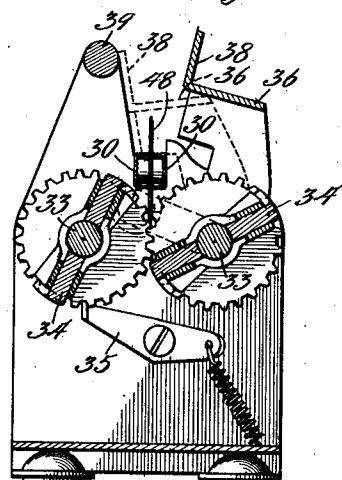
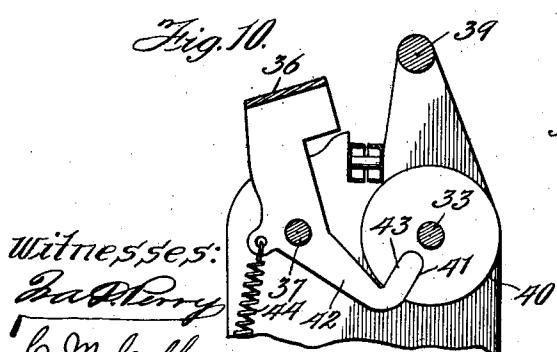


Fig. 10. 39



Technical drawing of a mechanical assembly labeled 'Fig. 11.' The drawing shows a base with a central vertical support. A horizontal beam is attached to the top of the support. The base has a scale with markings: 45, 47, 47, 46, 30, and 46. The vertical support has markings: 48 and 45. The drawing is a line drawing with some handwritten labels.

Witnesses:
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Altys

UNITED STATES PATENT OFFICE.

GEORGE BROWNING, OF CHICAGO, ILLINOIS, ASSIGNOR TO PERFECTION RAZOR STROP COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

RAZOR-SHARPENING MACHINE.

1,100,051.

Specification of Letters Patent.

Patented June 16, 1914.

Application filed July 25, 1908. Serial No. 445,314.

To all whom it may concern:

Be it known that I, GEORGE BROWNING, a subject of the King of England, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Razor-Sharpening Machines and the like, of which the following is a description.

My machine belongs to that class of devices intended to sharpen or strop a razor or a similar instrument in which means are provided for holding the instrument in position for the action of the sharpening or stropping means that are brought in contact with the blade by the operation of the machine.

It has for its object the construction of a simple, economical and very effective device for the purposes stated.

To this end the invention consists in the novel construction, arrangement and combination of parts herein shown and described and more particularly pointed out in the claims.

In the drawings wherein like reference characters indicate like or corresponding parts, Figure 1 is a side elevation of my improved machine particularly adapted for sharpening an ordinary razor or similar instrument of medium stiffness and provided with means for resiliently holding the blade in contact with the coöperating parts, Fig. 2 is a vertical sectional view on the line 2—2 of Fig. 3, Fig. 3 is a transverse section on line 3—3 of Fig. 2, Fig. 4 is a plan view of a slightly modified form adapted for the use in sharpening thin bladed razors such, for instance, as the Gillette and similar razors, Fig. 5 is a sectional view on line 5—5 of Fig. 1, Fig. 6 is a section taken on line 6—6 of Fig. 4. That is to say with the side removed. Fig. 7 is a plan view of a modification with parts broken away to show the construction, Fig. 8 is a rear elevation of the same, Fig. 9 is a central section taken on line 9—9 of Fig. 7, Fig. 10 is a partial vertical section showing the opposite side of the machine, and Fig. 11 is a perspective view of a blade holder for that class of razors known as the Gillette form.

In the drawings, 1 is a suitable frame having pivotally mounted near the lower part thereof a vertical oscillating bar 2 on each side which is held in a central position by a spring 3 attached at each end

to a lever 4 pivotally supported at one end as at 5 in the frame of the machine. A pin 4' limits the movement of the levers 4 in a direction toward the bar 2. Suitably geared rollers 6—6 arranged to oppose one another 60 on a line near the center of the bar 2 as shown in Fig. 1 are geared to a cog wheel 7 which may be operated by a crank 8 shown in dotted lines in Fig. 2.

Any suitable means may be provided to 65 secure the blade to be operated upon in position between the upper ends of the bars 2. As shown each bar 2 is centrally slotted at its upper end and provided with a pair of ears or projections 2'—2' adapted to receive 70 one end of the bar 9 between them and prevent its lateral movement in relation to the bars 2. A suitable shoulder or enlarged part is provided at each end of the bar 9 adapted to engage the outer face of each of 75 the bars 2 to prevent longitudinal movement of the bar 9 and a pin 9' or other suitable means is provided upon the lower face of the bar 9 adapted to enter one of the central longitudinal slots or recesses in the bars 80 2 and prevent the tipping or twisting of the bar 9 when my device is in operation. A spring clamp 10' of suitable form to receive and firmly hold the blade 10 to be sharpened is adjustably secured to the bar 9 by screws 85 5' or other suitable means adapted to adjust the position of the clamp to bring the blade 10 into suitable position between the opposing rollers 6—6. The rollers 6—6 are each provided with a stropping or sharpening member 11 arranged to coöperate to alternately engage the blade 10 on opposite sides. The blade of this type of razor is comparatively stiff and rigid and the oscillation of the bars 2 on their pivotal center 95 12 partially controlled by the spring 3, serves to resiliently hold the blade against the face 11 of the roller which is then acting thereon. A suitable locking member 13 adapted to prevent disengagement of the 100 blade-holder from the bars 2 and also to serve as a guard to partially control the operation of the device is provided. The member 13 is pivotally mounted as at 14 upon the frame of the machine with an extended 105 arm 15 formed integrally therewith arranged to coöperate with a part 19 upon a lever 16 which is pivotally mounted upon the frame 1 as at 21 and adapted to engage a notch 17 near the free end of the arm. 110

The part 15 is provided with a shoulder 18 adapted to be engaged by the part 19 when the member 13 is properly positioned to lock the blade-holder in place and permit the operation of the machine. A spring 20 is provided to resiliently draw the part 19 into position to engage the shoulder 18. The opposite side of the locking member 13 is also provided with an integral extension 22 having at its free end a projection 24 adapted when the locking member 13 is withdrawn or retracted from its locking position above the bar 9 to engage suitable notches in a disk 25 mounted upon a shaft 26 which also carries the gear wheel 7. A spring 28 or other suitable means is provided to resiliently hold the parts 13 retracted or out of its locking position. A spring pawl 27 is arranged to engage the teeth of the gear wheels 7 to prevent a reverse movement of the rolls 6 which might result in injury to the blade being sharpened as well as to portions of the machine.

In operation a blade 10 is positioned between the jaws of the clamp 10' as shown in Figs. 1 and 2 and the bar 9 properly engaged with the oscillating bars 2, the locking member 13 is moved into locking position thereby withdrawing the projection 24 from the notch in the disk 25 with which it was in engagement; (see Fig. 1) and the part 19 of the lever 16 engages the shoulder 18 in the arm 15 thereby firmly holding the locking member in position. The shank or handle 8 may then be operated to rotate the wheel 7 which transmits its motion by suitable means to the rolls 6—6 thereby alternately bringing their coöperating stroping elements 11 against opposite sides of the blade. The bars 2 are yieldingly held in position by the springs 3 and levers 4—4 bearing against their opposite sides and they oscillate in response to the pressure of the stroping element 11 against the opposite sides of the blade. When it is desired to remove the blade from the device the lever 16 is operated to disengage the member 19 from the shoulder 18 after which the machine may be operated until one of the notches in the disk 25 is positioned to be engaged by the projection 24, when the spring 28 will draw the locking member 13 backward releasing the blade holder 9 and preventing further rotation of the crank 8. In the preferred construction a centrally arranged handle 29 is provided for conveniently handling the device.

In the form shown in Figs. 4, 5 and 6 the device is adapted for stropping or 60 sharpening a thin flexible blade similar to the Gillette and similar razors. In this form the resilience of the blade is sufficient to provide the desired pressure for the stroping element 11 on opposite sides of the blade. The oscillating bars 2 therefore are

omitted and a suitable blade-holder 30 hereinafter more particularly described and shown is positioned in suitable slots 31 in the frame of the machine. The operation is substantially the same as above described 70 with the exceptions noted.

In Figs. 7, 8, 9 and 10 a simpler form of my device is shown for sharpening thin blades, in this form, shafts 33—33 carry the stropping or sharpening means 34 arranged 75 in pairs on opposite sides of each shaft thereby securing two engagements on each side of the blade at each revolution of the shaft. A pawl 35 prevents a reverse movement of the machine. The locking member 36 is pivotally mounted upon the frame of the device as at 37 and an integral extension 38 is provided thereon for manually controlling the position of the locking member. A cross-bar 39 is also provided and serves 80 as a convenient stop to limit the movement of the locking member in one direction. One of the shafts 33 projects beyond the side of the machine and a disk 40 having one or more notches 41 formed therein is 85 mounted upon the projecting end of the shaft and rigidly secured thereto. The locking member 36 is provided with an integral arm 42 having a projection 43 adapted to engage the notch 41 to lock the disk against 90 rotation. A spring 44 is provided arranged to normally retract the locking member 36 and to hold the projection 43 in engagement with the notch 41, as shown in Fig. 10.

Any suitable form of blade-holder may be 95 provided. In Fig. 11 a frame adapted for use with the thin blade hereinbefore referred to is shown. In this form a pair of coöperating bars 30 are provided one of which has a pair of laterally projecting 100 pins 45 rigidly secured thereto arranged to engage suitable holes 46 in the opposite bar. One of the bars 30 also carries a pair of projecting pins (not shown) adapted to engage the screw holes 47 in the blade 48. Suitable means may be provided upon the bar to properly engage any particular form 105 of blade and retain the same in position during the sharpening operation. The mode of operation of this form of my device is apparent. The blade is engaged by the holder, the latter is positioned in the slots provided to receive it to bring one edge of the blade into proper position between the stropping members. The locking member 36 is pressed 110 forward into contact with the bar 39 thereby withdrawing the projection 43 from the notch 41 in the disk 40. The crank may now be operated and the stropping members will be alternately applied to the opposite sides of the blade. When the work is completed the locking member 36 is released and upon continuation of the movement of the crank 8 the notch 41 will come into position to be engaged by the projection 43 115 120 125 130

thereby permitting the locking member to spring back into the position shown in Fig. 10 when the blade may be removed.

In the forms shown the sharpening elements are designed for stropping purposes only, but it is obvious that if desired suitably formed hones may be substituted for the stropping members hereinbefore described, thereby providing a suitable device for honing a razor. As shown the sharpening elements are arranged spirally around their centers of rotation. When thus constructed each sharpening element will first engage the blade at one end and from that point the stropping or sharpening surface is gradually drawn or wiped along the side of the blade substantially the same as in the usual stropping operation.

Having thus described my improvement it is obvious that various immaterial modifications may be made in my device without departing from the spirit of my invention, hence I do not wish to be understood as limiting myself to the exact form or construction shown.

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

1. In a device of the kind described, a detachable blade-holder, a pair of rotatable members each provided with a sharpening element extending longitudinally thereof, adapted to alternately engage a blade positioned in said blade-holder and move the same laterally, mechanism normally out of engagement with said blade-holder adapted to prevent the displacement of the same while said members are rotating, and means for rotating said members.

2. In a device of the kind described, a laterally movable detachable blade-holder, a pair of rotatable members each provided with a sharpening element extending longitudinally thereof adapted to alternately engage a blade positioned in said blade-holder and move the same laterally, and means for rotating said members.

3. In a device of the kind described, a detachable blade-holder, a pair of rotatable members, each provided with a sharpening element extending longitudinally thereof adapted to alternately engage a blade positioned in said blade-holder, mechanism controlled by said rotatable members adapted to prevent the disengagement of said blade-holder while said members are rotating, and means for rotating said members.

4. In a device of the kind described, a detachable blade-holder, a pair of rotatable members each provided with a sharpening element extending longitudinally thereof adapted to alternately engage a blade positioned in said blade-holder, locking means adapted to engage said members to temporarily prevent their rotation, and a guard adapted to prevent the disengagement of

said blade-holder until said locking means is engaged, and means for rotating said members.

5. In a device of the kind described, a detachable blade-holder, a pair of rotatable members each provided with a sharpening element extending longitudinally thereof adapted to alternately engage a blade positioned in said blade-holder, locking means adapted to engage said members to temporarily prevent their rotation and a guard formed integral with said locking means adapted to prevent the disengagement of said blade-holder until said locking means is engaged, and means for rotating said members. 70

6. In a device of the kind described, a laterally movable detachable blade-holder, a pair of rotatable members, each provided with a spiral sharpening element rigidly mounted upon said member and extending longitudinally thereof, adapted to alternately engage a blade positioned in said blade-holder and move the same laterally, and means for rotating said members. 80

7. In a device of the kind described, a frame provided with a pair of arms pivotally connected at one end to the frame, means for resiliently maintaining the arms in vertical position by pressure in either direction, said arms being provided at their free end to receive a blade holding member, and means for locking said member in position in the arms, in combination with a pair of opposing rotating members mounted in the frame on opposite sides of the center of the oscillating arms, each of said members being provided with sharpening elements arranged to contact with the blade placed therebetween and means for rotating the members 90

in unison. 100

8. In a device of the kind described, a frame, a pair of arms each pivotally attached near one end to said frame and a blade-holder mounted upon said arms, in combination with a pair of rotatable members each provided with a sharpening element extending longitudinally thereof, arranged to alternately engage a blade positioned in said bladeholder and move the same laterally, and 105 means for rotating said members. 110

9. In a device of the kind described, a pair of opposing rotating members spaced from one another and provided with sharpening elements arranged to contact with opposite sides of a blade placed therebetween, and means for rotating the members in unison in combination with means for positioning a blade between the opposing faces of the members, a latch member for retaining the blade in position comprising a pair of bell crank levers connected by a cross bar adapted to swing forward to cover the blade in positioning the opposite end of one of said bell cranks coöoperating with means to lock 115 120 125 130

the latch in position over the blade and the other coöperating with means to lock the rotating members against rotation when the locking member is out of operative position.

5 10. A device of the kind described, comprising a pair of rigidly connected arms each pivotally attached near one end to said frame and a blade-holder mounted upon said arms, in combination with a pair of 10 rotatable members each provided with a sharpening element extending longitudinally thereof, arranged to alternately engage a blade positioned in said blade-holder and move the same laterally, and means for 15 rotating said members.

11. In a device of the kind described, a laterally movable detachable blade-holder, a pair of rotatable members each provided with a spiral sharpening element extending 20 longitudinally thereof adapted to alternately engage a blade positioned in said blade-holder and move the same laterally, mechanism adapted to prevent the disengagement of said blade-holder while said 25 members are rotating, and means for rotating said members.

12. In a device of the kind described, a laterally movable detachable blade-holder, a pair of rotatable members each provided 30 with a sharpening element extending longitudinally thereof adapted to alternately engage a blade positioned in said blade-holder and move the same laterally, locking mechanism adapted to engage said members to 35 temporarily prevent their rotation, a guard adapted to prevent the disengagement of said blade-holder until said locking means is engaged, and means for rotating said members.

40 13. In a device of the kind described, a laterally movable detachable blade-holder, a pair of rotatable members each provided with a spiral sharpening element extending longitudinally thereof adapted to alternately 45 engage a blade positioned in said blade-holder and move the same laterally, locking means adapted to engage said members to

temporarily prevent their rotation, a guard formed integrally with said locking means adapted to prevent the disengagement of 50 said blade-holder until said locking means is engaged, and means for rotating said members.

14. A device of the kind described, comprising a frame, a pair of arms each pivotally attached near one end to said frame and a blade-holder detachably mounted upon said arms, in combination with a pair of 55 rotatable members each provided with a sharpening element extending longitudinally 60 thereof, arranged to alternately engage a blade positioned in said blade-holder and move the same laterally, and means for rotating said members.

15. A device of the kind described, comprising a pair of rigidly connected arms each pivotally attached near one end to said frame and a blade-holder detachably mounted upon the free ends of said arms, in combination with a pair of 70 rotatable members each provided with a sharpening element extending longitudinally 75 thereof, arranged to alternately engage a blade positioned in said blade-holder, and move the same laterally, and means for rotating said members.

16. A device of the kind described, comprising a frame, a pair of rigidly connected arms each pivotally attached near one end to said frame and a blade-holder detachably mounted upon the free ends of said arms, 80 in combination with a pair of rotatable members each provided with a sharpening element extending longitudinally thereof, arranged to alternately engage a blade positioned in said blade-holder and move the 85 same laterally, and means for rotating said members.

In testimony whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

GEORGE BROWNING.

Witnesses:

ROY W. HILL,
CHARLES I. COBB.