No. 769,115. PATENTED AUG. 30, 1904.

A. W. SCHEUBER.

RAZOR SHARPENING MACHINE.

APPLICATION FILED NOV. 12, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1

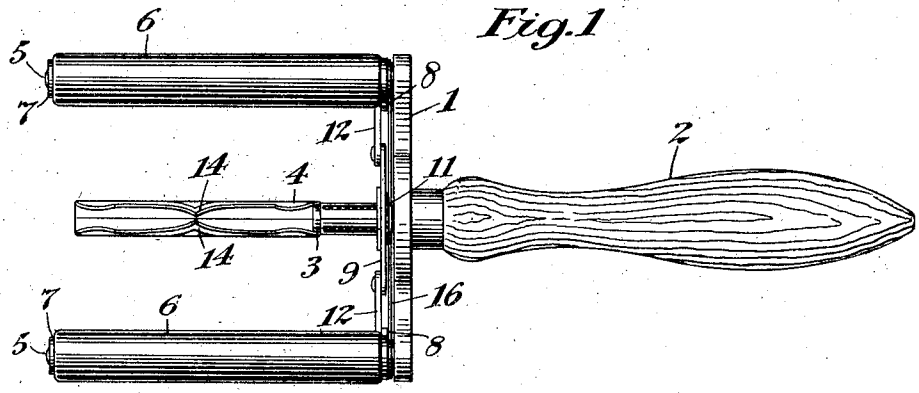


Fig. 2

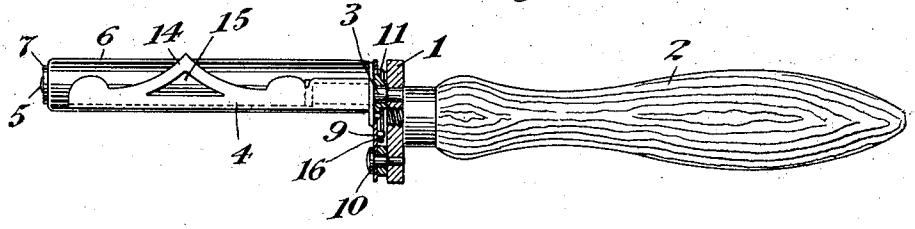


Fig. 3

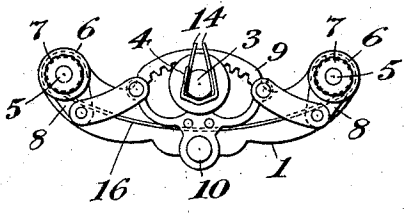
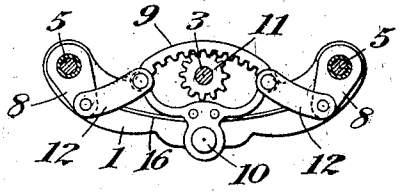


Fig. 4



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Inventor:
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RAZOR SHARPENING MACHINE.

APPLICATION FILED NOV. 12, 1903.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 5

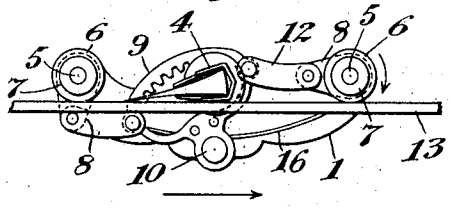


Fig. 6

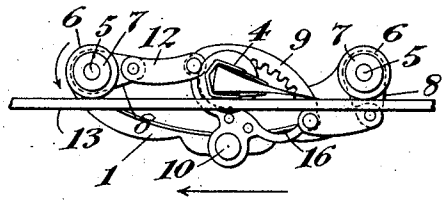


Fig. 7

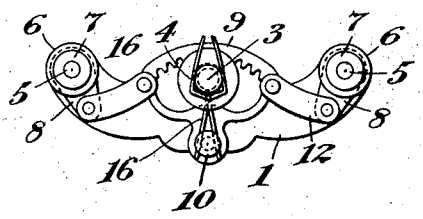


Fig. 8

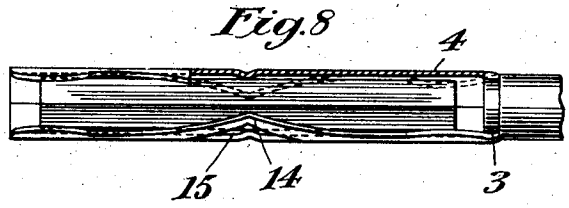
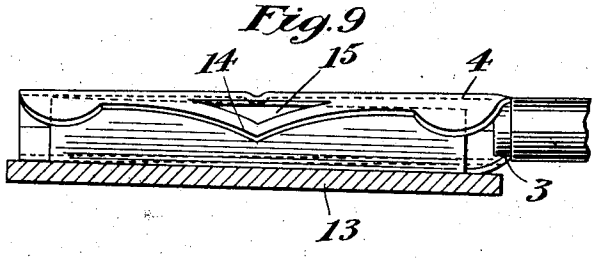


Fig. 9



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No. 769,115. Patented August 30, 1904.

UNITED STATES PATENT OFFICE.

AUGUST WILLIAM SCHEUBER, OF HOBOKEN, NEW JERSEY, ASSIGNOR TO HIMSELF, AND JEREMIAH REICHARD, OF CALDWELL, NEW JERSEY, DOING BUSINESS AS REICHARD & SCHEUBER MANUFACTURING COMPANY, A FIRM.

RAZOR-SHARPENING MACHINE.

SPECIFICATION forming part of Letters Patent No. 769,115, dated August 30, 1904.

Application filed November 12, 1903. Serial No. 180,914. (No model.)

To all whom it may concern:

Be it known that I, AUGUST WILLIAM SCHEUBER, a citizen of the United States, residing at Hoboken, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Razor-Sharpening Machines, of which the following is a full, clear, and exact specification.

My invention relates to machines for sharpening razor or other blades, and particularly to that class of machines wherein the blade is automatically turned over for bringing the edge into contact with the sharpening-surface, and has for its object to overcome objections to machines now in use.

Some of the advantages of my invention as contrasted with previous machines are that a moderate pressure of the friction device upon the strop will cause the blade to contact with the sharpening-surface with sufficient pressure to properly perform the sharpening operation, that the whole length or edge of the blade is equally and uniformly forced into contact with the sharpening-surface, that the blade is quickly and easily inserted into and withdrawn from the blade-holder, and other advantages flowing from my improved construction are hereinafter pointed out or will be found in use.

In the accompanying drawings I have shown a characteristic embodiment of the several features of my invention, and they disclose a very efficient and satisfactory machine. It is obvious, however, that my invention may be utilized in many other ways than in the specific form shown in the drawings, and I do not intend to limit myself in any wise thereto.

In the drawings, Figure 1 shows a plan view of the sharpening-machine complete; Fig. 2, a side sectional view; Fig. 3, an end view of the machine looking from left to right in Fig. 1, and Fig. 4 shows a sectional view of the reversing mechanism. Figs. 5 and 6 are similar views to Fig. 3, but show the parts in different positions assumed during the stropping operation. Fig. 7 is a similar view to Fig. 3, but shows a modified form of a spring for returning the parts to a normal position. Fig. 8 is an enlarged view of the blade-holder, partly in section for the sake of clearness; and Fig. 9 is an enlarged view of the blade-holder, showing the adjustability of the blade when in contact with the sharpening-surface.

Similar numerals of reference indicate like parts in all the drawings.

In the machine disclosed herein, 1 constitutes a plate or support to which is secured by any suitable means a handle 2. Upon this plate is rigidly mounted a stud 3, upon which is journaled the blade-holder 4, free to revolve, as will be hereinafter more fully described. Additional fixed spindles 5 5 are also secured to said plate, and upon these spindles are mounted to revolve in the usual manner the friction-rollers 6 6, the latter being held in place by washers 7 7, as will be readily understood, and these rollers are provided with depending arms 8 8, secured thereto and which rotate therewith. A rack 9, pivoted to the support at a suitable point 10, is adapted to rock back and forth and engages a pinion 11, rigidly secured to and which rotates with the blade-holder. Links 12 connect the rack aforesaid with the arms 8 8 on the friction devices and in conjunction therewith serve to turn the blade-holder into operative position when the friction-rollers are rotated by being moved over the sharpening-surface. It will be obvious that in the normal position (shown in Figs. 3 and 4) the blade-holder is upright and the rack substantially vertical over its pivot. Upon placing the friction-rollers in contact with a stropping-surface, such as 13, (see Fig. 5,) and moving the machine in the direction of the larger arrow in this figure the rollers are rotated as indicated and thus by means of the links 12 force the rack to the left, rotating the pinion and blade-holder and forcing the edge of the blade into contact with the sharpening-surface. It will likewise be seen that the arms 8 and links 12 form toggle-joint connections between the rollers and rack, and thus as the rollers are rotated and the blade made to approach the sharpening-surface the amount of movement of the blade is gradually decreased, but the pressure thereon gradually increased. This construction I have

found particularly effective for the following reasons: The blade-holder moves with considerable speed when passing the upright position, and thus the reversal of position is obtained very quickly and without the expenditure of very great power. At the same time, however, as the edge of the blade approaches the sharpening-surface it is gradually slowed up, and thus violent contact therewith is avoided. In addition the pressure on the blade is concurrently increased and reaches its maximum when needed—that is, at or about the time of contact. It will be readily understood that a structure employing this feature of my invention may be constructed wherein other kinds of friction devices are employed from that shown herein. It is also obvious that a single roller might be used without departing from the spirit of my invention, and I do not intend to limit myself to a double-roller machine.

An important advantage of my invention heretofore pointed out is that the blade when inserted in the blade-holder presses evenly against the stropping-surface, even though the parts may not be absolutely true, and the regular wearing away of the blade and the successful sharpening thereof are thereby facilitated. To accomplish this, I have provided a blade-holder, which is sufficiently wide at the bottom to prevent the blade from being gripped thereby with the gripping devices shown, consisting of a single pair of jaws 14, so arranged as to grasp the blade at a point about midway between its edge and back and about equally distant from each end. These jaws hold the blade firmly in the blade-holder, but permit it to oscillate slightly, as about a pivot, and thus allow the edge of the blade to adjust itself as it passes over the sharpening-surface. In Fig. 9 it will be seen that the blade-holder is at a slight angle to the plane of the sharpening-surface; but the blade while firmly held in the blade-holder tilts itself sufficiently to allow its edge to conform to the plane of the stropping-surface. Serious difficulty has also been found in providing a sharpening device with a blade-holder wherein the material of which the blade-holder is made is of sufficient strength to withstand hard usage and at the same time permit the gripping-jaws to be made sufficiently flexible. Various attempts have been made to this end; but I have found that my present blade-holder, which is provided with gripping-jaws containing one or more perforations 15, permits the use of sufficiently heavy material for the blade-holder and at the same time allows sufficient flexibility of the jaws to permit the ready insertion and withdrawal of the blade, nevertheless holding it at all times in firm position. In some instances it may be desirable to provide my present stropping-machine with a spring for returning the blade-holder to its normal position, and if so a spring 16 may be mounted in the frame so as to bear against projections on the rack 9 to return it to an upright position. A spring such as is shown in Fig. 7 may likewise be used, wherein a coil-spring is mounted to revolve with the pinion 11 and its ends brought into contact with opposite sides of the spindle 10.

It is obvious that many modifications and changes may be made in my invention from the particular structure shown and described; but

What I claim, and desire to secure by Letters Patent, is—

1. In a razor-sharpening machine, a suitable support, a movable blade-holder and friction device mounted upon said support, and a toggle-joint connection between said blade-holder and friction device for operating said blade-holder, substantially as described.

2. In a razor-sharpening machine, a suitable support, a movable blade-holder and friction device mounted upon said support, a toggle-joint connection between said blade-holder and friction device for operating said blade-holder, and means for returning the blade-holder to a normal position, substantially as described.

3. In a razor-sharpening machine, a suitable support, a movable blade-holder and friction device mounted upon said support, and a toggle-joint connection between said blade-holder and friction device, whereby the power applied to the blade-holder is increased as the blade approaches the sharpening-surface, and means for returning the blade-holder to its normal position, substantially as described.

4. In a razor-sharpening machine, a suitable support, a movable blade-holder and friction-rollers mounted upon said support, and means connecting said blade-holder and friction-rollers whereby the power applied to the blade-holder is increased as the blade approaches the sharpening-surface, substantially as described.

5. In a razor-sharpening machine, a suitable support, a movable blade-holder and friction-rollers mounted upon said support, means connecting said blade-holder and friction-rollers whereby the power applied to the blade-holder is increased as the blade approaches the sharpening-surface, and means for returning the blade-holder to its normal position, substantially as described.

6. In a razor-sharpening machine, a suitable support, a movable blade-holder and friction-rollers mounted upon said support, and toggle-joint connections between said blade-holder and friction-rollers for operating the blade-holder, substantially as described.

7. In a razor-sharpening machine, a suitable support, a movable blade-holder and friction-rollers mounted upon said support, toggle-joint connections between said blade-holder and friction-rollers for operating the blade-holder and means for returning the blade-

holder to a normal position, substantially as described.

8. In a razor-sharpening machine, a suitable support, a movable blade-holder and friction-rollers mounted on said support, toggle-joint connections between said blade-holder and friction-rollers whereby the power applied to the blade-holder is increased as the blade approaches the sharpening-surface, and means for returning the blade-holder to its normal position, substantially as described.

9. In a razor-sharpening machine, a suitable support, a movable blade-holder and friction-rollers mounted on said support, and means comprising a movable rack, and toggle-joint connections between said blade-holder and friction-rollers whereby the power applied to the blade-holder is increased as the blade approaches the sharpening-surface, substantially as described.

10. In a razor-sharpening machine, a suitable support, a movable blade-holder and friction-rollers mounted on said support, means comprising a suitable rack, and toggle-joint connections between said blade-holder and friction-rollers whereby the power applied to the blade-holder is increased as the blade approaches the sharpening-surface, and means for returning the blade-holder to its normal position, substantially as described.

11. In a razor-sharpening machine, a suitable support, a movable blade-holder and friction-rollers mounted on said support, a movable rack, links connecting said friction-rollers and said rack and means connecting said rack with said blade-holder, substantially as described.

12. In a razor-sharpening machine, a suitable support, a movable blade-holder and friction-rollers mounted on said support, a movable rack, links connecting said friction-rollers with said rack and means connecting said rack with said blade-holder whereby the power applied to the blade-holder is increased as the blade approaches the sharpening-surface, substantially as described.

13. In a razor-sharpening machine, a suitable support, a movable blade-holder and friction-rollers mounted upon said support, a movable rack, links connecting said friction-rollers and said rack, means connecting said rack with said blade-holder, and means for returning the blade-holder to its normal position, substantially as described.

14. In a razor-sharpening machine, a suitable support, a movable blade-holder and friction-rollers mounted upon said support, a movable rack, links connecting said friction-rollers and said rack, means connecting said rack with said blade-holder, whereby the power applied to the blade-holder is increased as the blade approaches the sharpening-surface, and means for returning the blade to its normal position, substantially as described.

15. In a razor-sharpening machine, a suitable support, a movable blade-holder and friction-rollers mounted upon said support, a pivoted rack, links connecting said rack and lugs on said friction-rollers, and means connecting said rack and said blade-holder, substantially as described.

16. In a razor-sharpening machine, a suitable support, a movable blade-holder and friction-rollers mounted upon said support, a pivoted rack, links connecting said rack and lugs on said friction-rollers, means connecting said rack and said blade-holder, and means for returning the blade-holder to its normal position, substantially as described.

17. A blade-holder for a razor-sharpening machine provided with means whereby the blade automatically adjusts itself to bear against the strop, substantially as described.

18. A blade-holder for a razor-sharpening machine having devices for gripping the blade at a single point to permit the self-adjustment of the same, substantially as described.

19. A blade-holder for a razor-sharpening machine having centrally-disposed gripping devices so arranged as to permit a slight oscillation of the blade for the purpose of allowing it to adjust itself, substantially as described.

20. A blade-holder for a razor-sharpening machine having a single pair of perforated gripping devices adapted to grip the blade at a single point, substantially as described.

21. A blade-holder for a razor-sharpening machine, having a plurality of perforated gripping devices for holding the blade, said devices being so arranged as to permit the self-adjustment of the blade, substantially as described.

22. A blade-holder for a razor-sharpening machine, having a pair of centrally-disposed perforated gripping devices for holding the blade, said devices being so arranged as to permit the self-adjustment of the blade, substantially as described.

23. In a razor-sharpening machine employing friction devices, means for oscillating the blade-holder comprising arms connected to said friction devices and operated thereby, which arms are in their normal position, arranged in a converging relation to each other, substantially as described.

24. In a razor-sharpening machine, a support carrying a blade-holder, suitable friction devices arranged to rock said blade-holder and connections between said friction devices and said blade-holder comprising arms, links and a rack and pinion, substantially as described.

In testimony whereof I hereunto set my hand in the presence of two subscribing witnesses.

AUGUST WILLIAM SCHEUBER.

Witnesses:

ADOLPH F. DINSE,

A. C. FISCHER.