

No. 609,367.

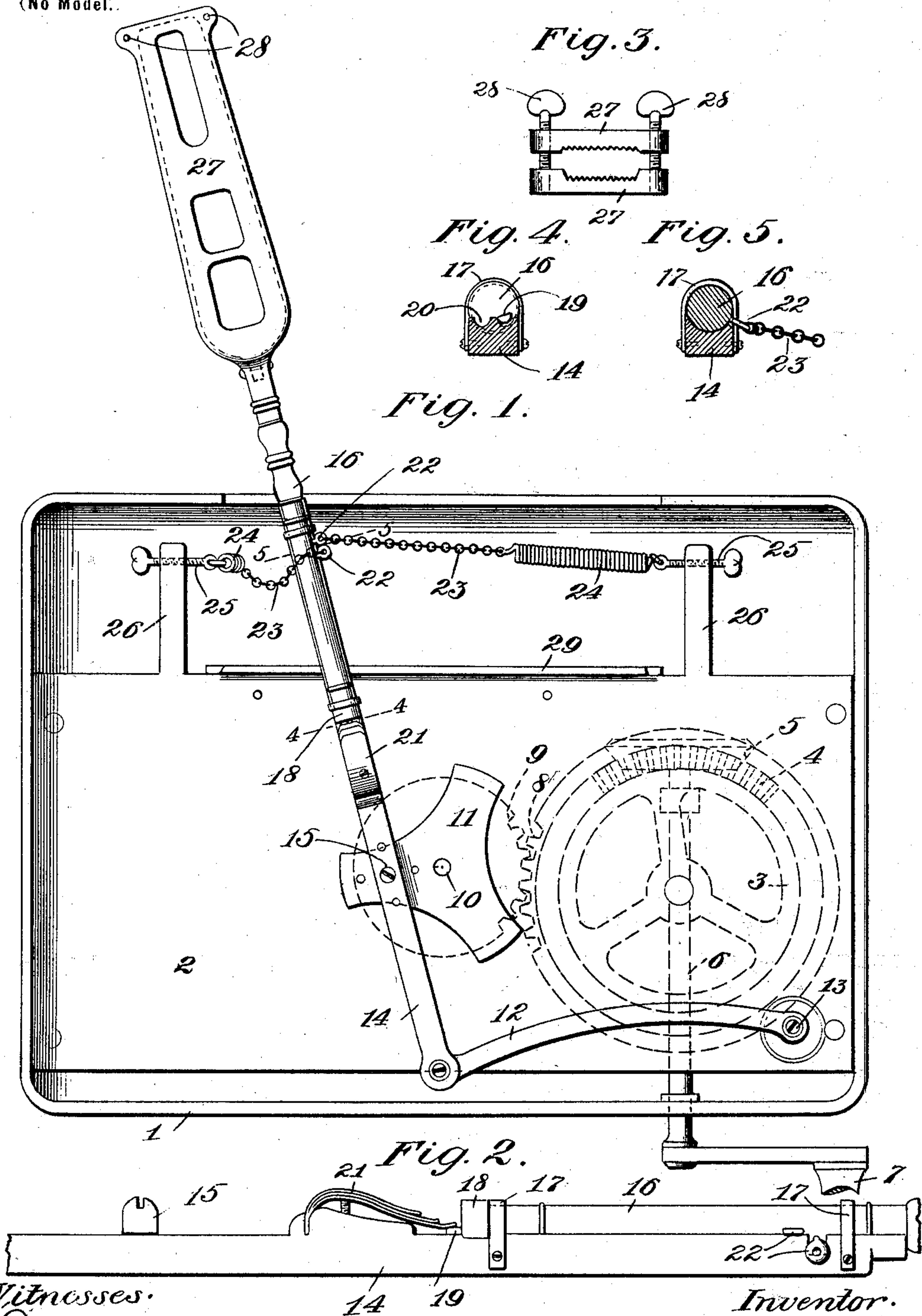
Patented Aug. 16, 1898.

W. PURDY.

DEVICE FOR SHARPENING EDGED TOOLS.

(Application filed Sept. 28, 1897.)

(No Model.)



Witnesses.

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UNITED STATES PATENT OFFICE.

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DEVICE FOR SHARPENING EDGED TOOLS.

SPECIFICATION forming part of Letters Patent No. 609,367, dated August 16, 1898.

Application filed September 28, 1897. Serial No. 653,342. (No model.)

To all whom it may concern:

Be it known that I, WALTER PURDY, a citizen of the United States, residing at Somerset, in the county of Somerset and State of Pennsylvania, have invented certain new and useful Improvements in Devices for Sharpening Edged Tools, of which the following is a specification.

My invention relates to devices for sharpening razors and other edged tools, and has for its object more particularly to provide certain improvements in the construction disclosed in Letters Patent No. 570,337, granted to me October 27, 1896, whereby the razor or other edged tool may not only be moved over the hone in such manner that its path of travel shall be in the form of an oval or ellipse, but will also be automatically turned over at each end of its stroke, so that the tool to be sharpened will be constantly moved with its edge in advance.

This object I accomplish in the manner and by the means hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of my improved device. Fig. 2 is a side elevation of a portion of the main and tool-carrying arms. Fig. 3 is a front elevation of the tool-carrier. Fig. 4 is a transverse section through the main arm, taken on the line 4 4 of Fig. 1; and Fig. 5 is a similar view taken on the line 5 5 of Fig. 1.

In the said drawings the numeral 1 denotes a suitable supporting-casing having fixed therein a plate 2, to which is attached on the under side a gear-wheel 3, said gear-wheel having a right-angled gear 4, adapted to mesh with a similar gear 5, carried on the inner end of a shaft 6, that projects through the side of the casing 1 and carries a suitable handle 7 at its outer end. The geared edge 8 of the gear-wheel 3 meshes with gear-wheel 9, also carried on the under side of plate 2, the shaft 10 of which projects up through said plate and carries fixed thereto the star-wheel 11, as shown.

Mounted upon the plate 2 is a lever 12, pivoted to said plate at one end at 13 and pivotally connected at its other end to a main arm 14, which in turn is pivotally connected ec-

centrically to the star-wheel 11 at the point 15, as shown in Fig. 1.

All of the above-described parts correspond in function to the mechanism described in my above-mentioned patent for imparting to the tool-carrying arm an oval motion over the hone and while differing somewhat in detail perform exactly the same function, and therefore form no essential part of the present invention, it being desired, however, that such means be provided for imparting to the free end of the arm 14 an oval or elliptical motion.

Referring now to said arm 14, it will be seen that the same is concaved on its upper surface at its front end to receive the tool-carrying arm 16, as clearly shown in Fig. 5, suitable collars 17 retaining said arm 16 in position, the rear one of said collars abutting against the enlarged end 18 of said arm 16, thus preventing longitudinal displacement. At its rear end said arm 16 is provided with a projecting pin 19, adapted to lie in either one of two sockets 20, formed in the arm 14, and to thus limit the rotary movement of said arm 16. A leaf-spring 21, fixed to arm 14, bears on said pin 19 and serves to retain the same in either of the sockets 20 against anything but a positive displacement.

Fixed to one side of the arm 16 near its front end are two eyes 22, to each of which is attached a cord or chain 23, that in turn is connected to a coiled spring 24, said springs being fixed at their other ends to suitable screw-rods 25, carried by brackets 26 on plate 2.

The arm 16 at its outer end carries a tool-holder consisting of two plates 27, one fixed thereto and the other hinged, as shown, said plates being adjustably held together at their front ends by screw-bolts 28, as shown in Fig. 3, the front edges of said plates being serrated to afford a firmer hold on the tool.

From the above description the operation of my improved construction will be understood to be as follows: With the parts in the position shown in Fig. 1 it will be understood that the tool to be sharpened—a razor, for instance—is clamped between the plates 27 of the tool-holder with its blade projecting and lying with its edge toward the right. Located

directly beneath this blade will be the hone, (not shown,) the same being supported in contact with said blade, preferably in the manner described in my above-mentioned patent.

5 Now upon motion being imparted to the handle 7 an oval or elliptical motion over the hone will be imparted to the supported razor, as will be readily understood. This movement of the arm 16 and the razor to the right
10 will cause the tension of the right-hand spring 24 to relax and that of left-hand spring to come in force, this tension being so regulated by the screw-rod 25 that just as the arm 16 reaches its extreme movement to the right
15 the tension of left-hand spring 24 will be sufficient to overcome the resistance of leaf-spring 21 on the pin 19 and to cause the arm 16 and the razor to be turned half-way round in the arm 14, this movement being limited
20 by the contact of pin 19 with the left-hand socket 20 and the contact of the eye 22 with the side of arm 14, as will be readily understood. It will thus be seen that this rotation of the arm 16 and the razor will bring the
25 blade of the latter with its edge to the left ready for the return movement of the arm 16. The further movement of arm 16 will reverse the operation, and just before it reaches the position shown in Fig. 1 the said arm and
30 razor will be reversed to the position shown by the action of left-hand spring 24. It will thus be seen that the edge of the razor or other tool will always be presented in the direction of movement of the holder 27, the position necessary for the proper sharpening of
35 the same, while at the same time said tool will receive an oval or elliptical motion over the hone, as described in my before-mentioned patent.

40 If desired, a rail 29 may be formed on the front edge of the plate 2 to support the arm 14 in its movement.

Having thus described my invention, what I claim as new, and desire to secure by Letters
45 Patent, is—

1. In a device for sharpening edged tools, the combination with a support, and a hone in fixed relation thereto, of an arm mounted on said support and adapted to carry the tool
50 to be sharpened in contact with the hone, means for imparting to the end of said arm carrying the tool an oval or elliptical motion

over the surface of the hone, and means for reversing the position of the edge of the tool at approximately each limit of its movement, 55 substantially as set forth.

2. In a device for sharpening edged tools, the combination with a support, and a hone in fixed relation thereto, of a main arm mounted on said support, a tool-carrying arm rotatably mounted in said main arm and adapted to carry the tool to be sharpened in contact with the hone, means for imparting motion to said main arm, and resilient members connected to one side of said tool-carrying arm
65 and connected at their other ends to points on each side of said tool-carrying arm whereby the reciprocation of said tool-carrying arm therebetween will alternately cause the tension of said resilient members to be exerted
70 to rotate said tool-carrying arm in the main arm, substantially as set forth.

3. In a device for sharpening edged tools, the combination with a support, and a hone in fixed relation thereto, of a main arm mounted on said support, a tool-carrying arm rotatably mounted in said main arm and adapted to carry the tool to be sharpened in contact with the hone, means for imparting motion to said main arm, resilient members connected to one side of said tool-carrying arm and
80 connected at their other ends to brackets on each side of said tool-carrying arm whereby the reciprocation of said tool-carrying arm therebetween will alternately cause the tension of said resilient members to be exerted
85 to rotate said tool-carrying arm in the main arm, a pin on the inner end of said tool-carrying arm adapted to engage with sockets formed in the main arm to limit the rotation
90 of said tool-carrying arm in said main arm, and a leaf-spring on said main arm adapted to contact with said pin to hold it in position against any but positive movement imparted by the resilient members, substantially as set
95 forth.

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

WALTER PURDY.

Witnesses:

CHARLES W. WALKER,
JOSEPH LEVY.