No. 631,842. Patented Aug. 29, 1899.

C. A. WORDEN, Dec'd.
M. L. WORDEN, Administratrix.
SHARPENING MACHINE.
(Application filed Dec. 23, 1898.)

(No Model.)

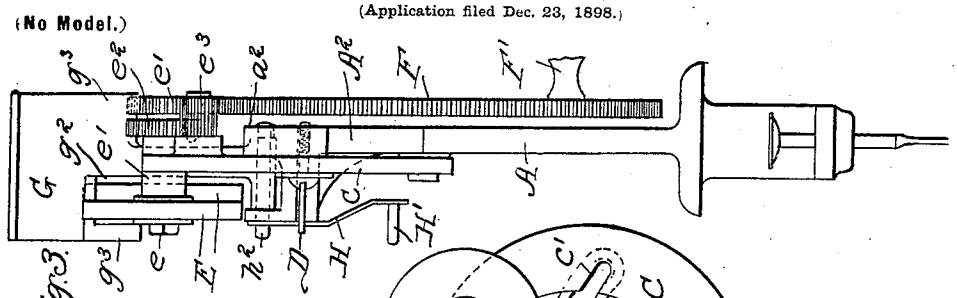


Fig. 3.

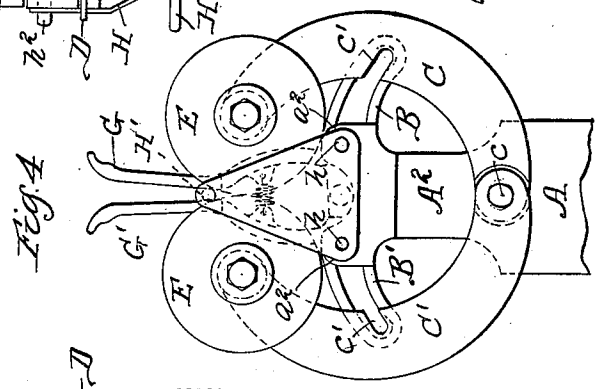


Fig. 4.

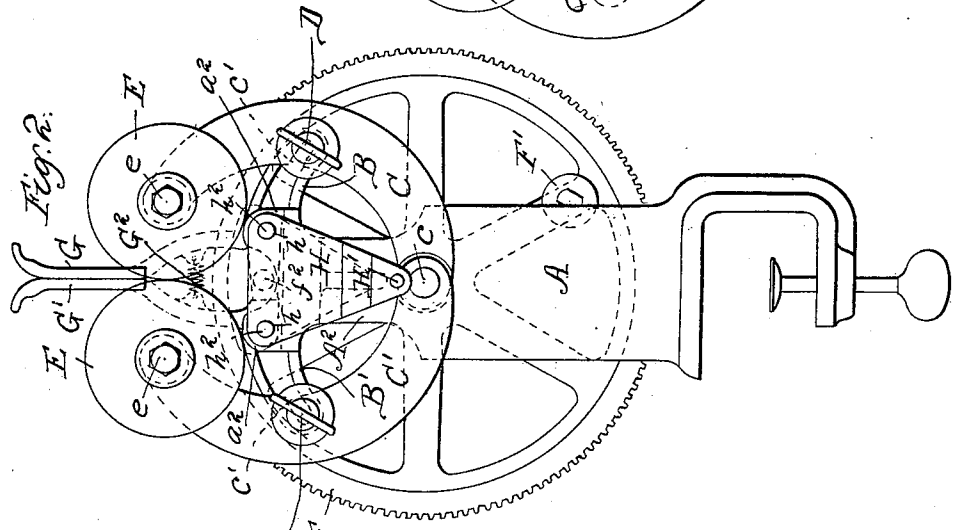


Fig. 2.

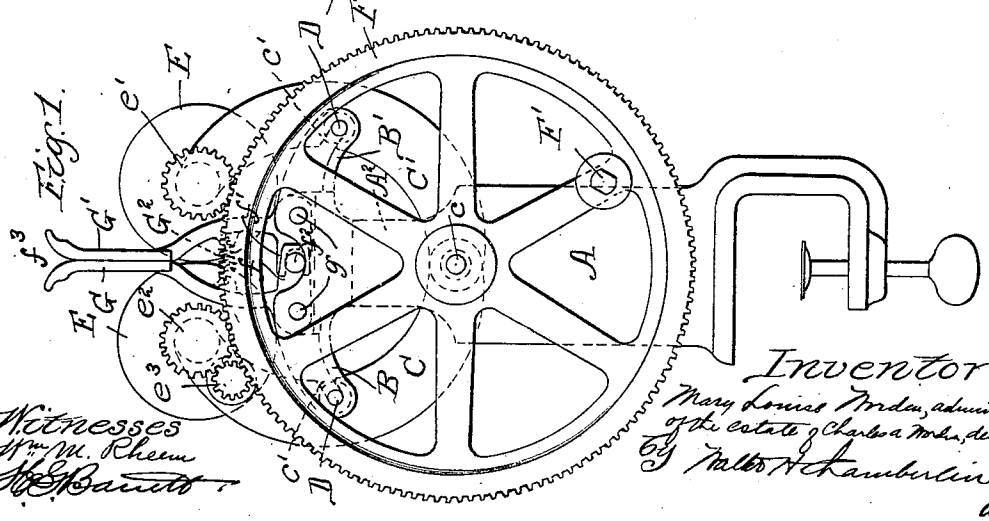


Fig. 1.

Witnesses
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By Miller & Chamberlin.
Att'ys.

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UNITED STATES PATENT OFFICE.

MARY LOUISE WORDEN, OF FORT LOGAN, COLORADO, ADMINISTRATRIX OF CHARLES A. WORDEN, DECEASED, ASSIGNOR TO THE UNIVERSAL SHARPENING MACHINE COMPANY, OF CHICAGO, ILLINOIS.

SHARPENING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 631,842, dated August 29, 1899.

Application filed December 23, 1898. Serial No. 700,179. (No model.)

To all whom it may concern:

Be it known that CHARLES A. WORDEN, (MARY LOUISE WORDEN sole administratrix of the estate of CHARLES A. WORDEN, deceased,) late a resident of Fort Logan, county of Arapahoe, State of Colorado, did invent a certain new and useful Improvement in Sharpening-Machines; and it is declared that the following is a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

The invention has for its object the production of a sharpening-machine for use in sharpening knives, surgical instruments, razors, and other cutlery in which proper provision is made for the adjustment of the grinding-wheels and for the holding of the knife or other article to be sharpened during the process of sharpening. It consists of a combination of devices and appliances hereinafter described and claimed.

In the drawings, Figure 1 is a front elevation of the machine. Fig. 2 is an edge elevation thereof. Fig. 3 is a rear elevation, and Fig. 4 is a detail illustrating the gage.

In carrying out the invention A presents what may be termed the "main" frame of the machine. It is the standard on which the parts are mounted. It is provided at the lower end with any suitable clamping mechanism whereby it may be fixed to a table or the like.

B B′ are arms extending from the main standard and preferably formed integral therewith.

C C′ are the adjustable arms, carrying the emery-wheels. They are pivoted at *c* to the main standard and curve outward, upward, and inward, as shown. At the points where they pass arms B B′ they are slotted, as shown at *c′*.

D are thumb-screws engaged, respectively, in the arms B B′ and provided with washers. When the arms C C′ are thrown up to their proper position, the slots *c* embrace these thumb-screws D and are held in any desired position thereby.

E are the grinding-wheels engaged to axles *e*, which revolve in suitable bearings *e′* on the ends of the arms C C′. On the opposite end of each axle is a pinion $e' e^2$, the pinion e' meshing directly with the large driving-pinion F, while the pinion e'' meshes with another pinion e^3, which is mounted in the arm C′, and this latter pinion e^3 meshes with the large driving-pinion F. The pinion F is mounted on the main standard A and is provided with a handle F′, whereby it may be revolved. Thus a revolution of the large pinion F revolves the grinding-wheels E in opposite directions to each other.

Extending from the main standard and preferably integral therewith is what may be termed a "supporting-plate" A^2, having parallel projecting ears or flanges a^2.

G G′ are jaws constituting the blade-holding device. The lower end of each is of substantially bell-crank form, they being pivoted in the supporting-plate by pivots *g*. The jaw G has a single projection *f*, while the jaw G′ has a bifurcated projection *f′*. The projection *f* is slotted and embraces the pin f^2 in the projection *f′*, so that a tilting of one jaw will act to correspondingly tilt the other. The spring G^2 keeps the two jaws normally together at their upper ends. These upper ends are flared somewhat, as shown at f^3, so that the blade can readily be inserted between them. The upper end of each of the jaws is provided with an opening or recess g^2, in which the grinding-wheels can revolve, and this opening g^2 forms a depending arm or projection g^3 on each jaw, which extends down outside of the grinding-wheels, so that the blade to be sharpened has a support on each side of the grinding-wheels.

H is a gage and is employed to set the grinding-wheels in the desired position. It is of substantially triangular shape, one corner being provided with a pin H′, while the other two corners are provided with orifices *h*. To use the gage, the operator inserts the pin H′ between the jaws and brings the orifices *h* down to and over the pins h^2 on the face of the supporting-plate A^2. He then loosens the thumb-screws D and brings the grinding-wheels against the pin H′. He then tightens the thumb-screws, thus locking the arms C

C' in place, and removes the gage. He can either remove the gage altogether from the machine or he can reverse its position and allow the end carrying the pin H' to depend.

It will be seen that by the above construction a sharpening-machine has been provided wherein the sharpening-wheels can be easily adjusted to the desired position and also one wherein the blade to be sharpened is firmly held in position during the sharpening process.

What is claimed is—

1. In a sharpening-machine, the combination of grinding-wheels and a holding device consisting of spring-actuated pivoted jaws, substantially as described.

2. In a sharpening-machine, the combination with the device for holding a blade consisting of spring-actuated pivoted jaws, of a pair of grinding-wheels mounted one on each side of said blade-holding device and pivoted supports carrying said grinding-wheels whereby the angular distance between the grinding-wheels may be varied, substantially as described.

3. In a sharpening-machine, the combination with the grinding-wheels and adjustable supports for the same, of a blade-holding device, consisting of a pair of jaws having an opening or recess in which the grinding-wheels revolve and depending arms outside said grinding-wheels, substantially as described.

4. In a sharpening-machine, the combination with the grinding-wheels and adjustable supports for the same, of a blade-holding device, consisting of a pair of spring-actuated metal jaws having an opening or recess in which the grinding-wheels revolve and depending arms outside said grinding-wheels, substantially as described.

5. In a sharpening-machine, the combination with the base or support of supports adjustably secured to said base, a pair of grinding-wheels, each of said grinding-wheels mounted on one of said adjustable supports, a supporting-plate fixed with respect to said base and located between said adjustable supports and spring-actuated jaws adapted to hold the blade in position and mounted upon said supporting-plate, substantially as described.

6. In a sharpening-machine, the combination with a base, of an arm adjustably secured thereto, means for securing said arm in different angular positions, uprights carried by said arms, shafts journaled in said uprights, wheels mounted fast on said shafts, upright pivoted jaws mounted between said wheels and adapted to hold the blade of the instrument to be ground in a vertical plane, substantially as described.

7. In a sharpening-machine, the combination with the base or support, of arms adjustably secured thereto, means for securing said arms in different angular positions, uprights carried by said arms, shafts journaled in said uprights, wheels mounted fast on said shafts, upright pivoted jaws mounted between said wheels and adapted to hold the blade to be ground in a vertical plane and means for rotating said shafts at the same rate of speed, substantially as described.

8. In a sharpening-machine, the combination with a base; of a pair of arms pivoted thereto; means for securing the said arms in different position; uprights carried by said arms; shafts journaled in said uprights; a grinding-wheel mounted fast on each of said shafts; spring-actuated upright pivoted jaws mounted between the said wheels and adapted to hold the blade of the instrument to be ground in a vertical plane, substantially as described.

9. In a sharpening-machine, the combination with the base or support of arms adjustably secured thereto, shafts journaled in said arms, grinding-wheels mounted on said shafts each shaft provided with a pinion, a driving-gear mounted on the base or support, the pinion on each shaft meshing directly with said driving-gear and the pinion on the other shaft meshing with an auxiliary pinion which meshes with the driving-gear and a blade-holding device consisting of pivoted jaws for holding the blade in a vertical plane while being ground, substantially as described.

10. In a sharpening-machine, the combination with a base or support, of arms pivoted thereto, a grinding-wheel mounted in each of said arms, engaging pins located below said grinding-wheels and a gage provided with a pin adapted for insertion between said grinding-wheels, said gage adapted also for engagement with said pin, substantially as described.

11. In a sharpening-machine, the combination with the device for holding a blade consisting of a pair of spring-actuated pivoted jaws, of a pair of grinding-wheels mounted one on each side of said blade-holding device, pivoted supports carrying said grinding-wheels whereby the angular distance between the grinding-wheels may be varied and a gage for regulating said distance consisting of a plate of substantially triangular shape, one corner provided with a pin adapted for insertion between the pivoted jaws and between the grinding-wheels, the other two corners adapted for engagement with fixed points on the supporting-plate, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

MARY LOUISE WORDEN,
Administratrix of the estate of Charles A. Worden, deceased.

Witnesses:
N. W. HUBBARD, Jr.,
HARRIET H. HUBBARD.