No. 822,070. PATENTED MAY 29, 1906.

A. M. McLERAN.

SHARPENING MACHINE.

APPLICATION FILED JUNE 2, 1905.

2 SHEETS—SHEET 1.

Fig. 2.

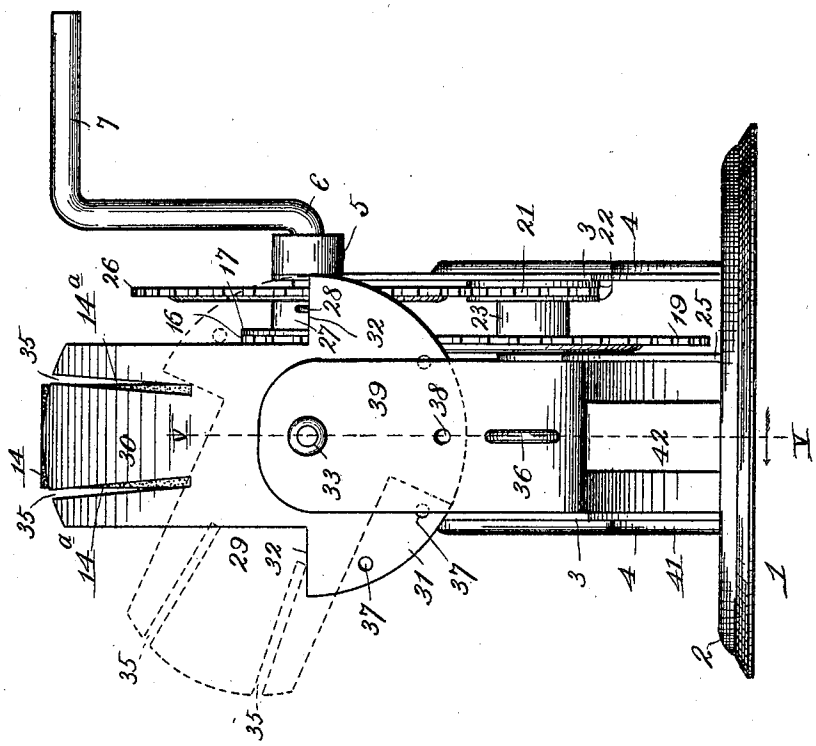
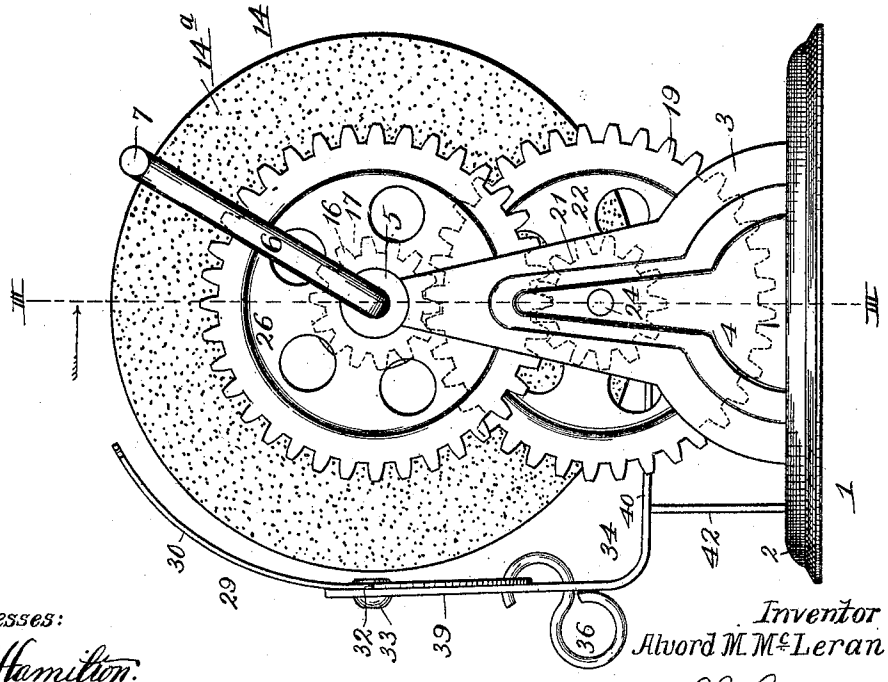


Fig. 1.



Witnesses:

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2 SHEETS—SHEET 2.

Fig. 4.

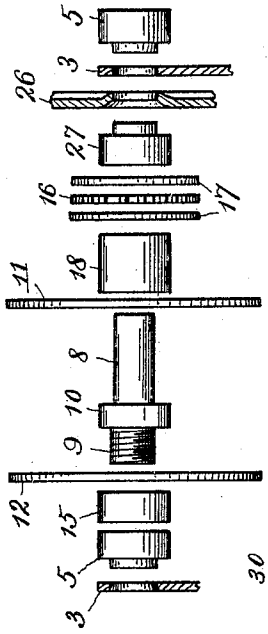


Fig. 6.

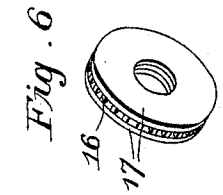
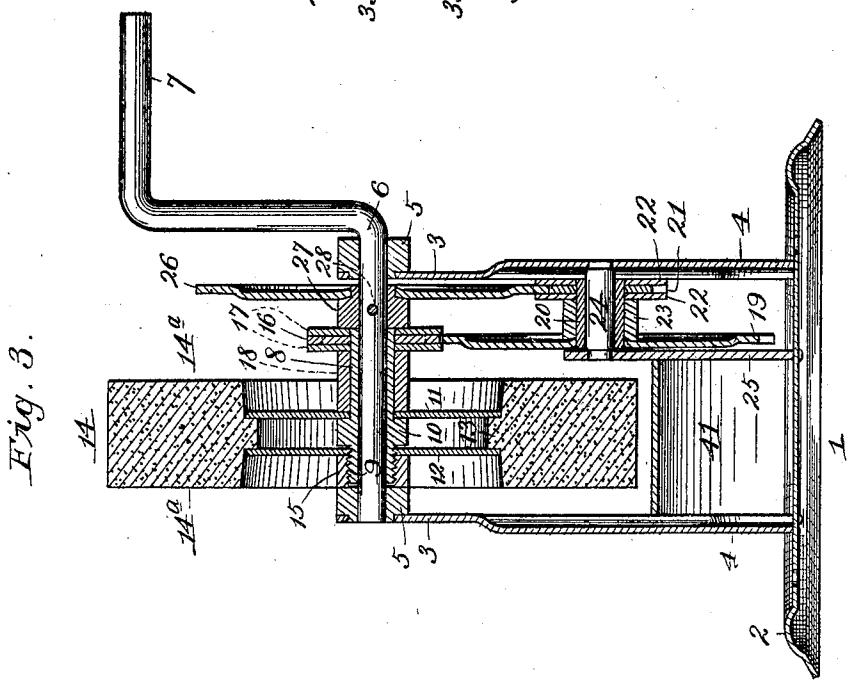


Fig. 5.

Fig. 3.



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UNITED STATES PATENT OFFICE.

ALVORD M. McLERAN, OF KANSAS CITY, MISSOURI, ASSIGNOR TO TWO-EDGE MANUFACTURING COMPANY, OF KANSAS CITY, MISSOURI, A CORPORATION OF SOUTH DAKOTA.

SHARPENING-MACHINE.

No. 822,070. Specification of Letters Patent. Patented May 29, 1906.

Application filed June 2, 1905. Serial No. 263,494.

To all whom it may concern:

Be it known that I, ALVORD M. McLERAN, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Sharpening-Machines, of which the following is a specification.

This invention relates to improvements in sharpening-machines, and is an improvement over the machine for which United States Patent No. 726,974 was granted to me on the 5th day of May, 1903.

One of my objects is to provide a sharpening-machine possessing practically all of the advantages disclosed in the machine covered by the patent above referred to with the addition of certain novel features hereinafter set forth.

A further object is to form nearly all the parts of the machine in such a manner that they may be struck from sheet metal with dies, so that the cost of production and the work of assembling the various parts will be reduced to a minimum.

In order that the invention may be fully understood, reference will now be made to the accompanying drawings, in which—

Figure 1 represents a side elevation of my improved machine. Fig. 2 is a front elevation of same. Fig. 3 is a vertical section taken on line III III of Fig. 1. Fig. 4 is a detached view of the several parts adapted to be carried by the crank-shaft. Fig. 5 is a vertical section of the base and a gage-support, taken on line V V of Fig. 2. Fig. 6 is a detail perspective view of one of the pinions employed in driving the sharpening-wheel.

In said drawings, 1 designates a circular base-plate reinforced by an annular bead 2.

3 designates a pair of standards reinforced with integral ribs 4 and riveted at their lower ends to the base-plate. Said standards are provided at their upper ends with bearings 5, riveted thereto, as shown in Fig. 3.

6 designates a crank-shaft journaled in said bearings and provided with a handle 7, whereby it is rotated.

8 designates a bushing provided near its threaded end 9 with an integral shoulder 10, against one side of which a clamping-disk 11 abuts.

12 designates a companion clamping-disk loosely fitting over the threaded end of the bushing at the opposite side of shoulder 10. Said disks engage an internal centrally-disposed flange 13, integral with the sharpening-wheel 14, which latter may consist of any suitable material. Flange 13 is made as narrow as possible in order to present broad grinding-surfaces 14^a at opposite sides of the wheel, where most of the grinding will take place. The clamping-disks are made to firmly engage flange 13 by means of a nut 15, engaging the threaded portion 9 and adapted to be screwed tightly into contact with the outer surface of disk 12. Said nut also acts as a collar in spacing the grinding-wheel the proper distance from the adjacent standard.

The opposite end of bushing 8 extends through a pinion 16 and two guide-disks 17, to one of which said end is riveted, a spacing-sleeve 18 being interposed between the other guide-disk and the clamping-disk 11 in order to assist nut 15 in positioning the sharpening-wheel. With this construction the bushing, together with the parts secured thereto, rotate upon the crank-shaft.

Disks 17 are of the same diameter as pinion 16 to prevent the intermeshing teeth of a large cog-wheel 19 from moving laterally and becoming disengaged from said pinion. Cog-wheel 19 is rigidly mounted upon one end of a bushing 20, provided at its opposite end with a rigidly-mounted pinion 21 and two guide-disks 22, arranged at opposite sides of said pinion. Cog-wheel 19 and pinion 21 are held the proper distance apart by an interposed spacing-sleeve 23, mounted upon bushing 20, the ends of which are riveted, as shown in Fig. 3, in order to securely bind the parts mounted thereon, and thus cause them to rotate therewith.

Bushing 20 is journaled upon a stationary shaft 24, secured at its reduced ends in the adjacent standard 3, and an auxiliary standard 25, riveted at its lower end to the base-plate.

Pinion 21 is driven by a master cog-wheel 26, mounted upon a hub 27, riveted thereto and secured upon the crank-shaft by means of a cotter-pin 28. By thus arranging the master-wheel 26 and the pinion 16 in horizontal alinement, as shown, it is obvious that the size of the machine may be reduced to a minimum while at the same time the gears

may be multiplied to impart sufficient speed to the grinding-wheel for all practical purposes.

In order that knives or bevel-edge tools may be properly ground by even a novice, I provide an adjustable gage 29, comprising an upper curved portion 30 and a semicircular lower portion 31, of greater width than the curved portion, in order to provide oppositely-disposed shoulders 32, adapted to intersect either of the grinding-surfaces 14ª of the grinding-wheel at an obtuse angle, as partly illustrated by dotted lines, Fig. 2. In order that the gage may be adjusted to the dotted position, it is mounted upon a pivot 33, concentric with the semicircular portion 31 and secured to the upper end of a support 34. Curved portion 30 is provided near its sides with slots 35, which slightly converge toward their lower terminals, as shown in Fig. 2, in order to intersect the grinding-surfaces 14ª, and thus provide rests when sharpening knives, the shoulders 32 being better adapted for positioning bevel-edged tools against said grinding-surfaces. The gage is reliably held in its various positions by passing the curved upper portion of a key 36 through any of the openings 37 in the semicircular portion and an opening 38 in support 34.

Support 34 comprises a right-angled member consisting of a vertical portion 39, in which key 36 is slidably mounted, a horizontal portion 40, extending over the base-plate and terminating in a downwardly-curved rear portion 41, riveted to said base-plate, and an integral supporting-leg 42, riveted to the opposite side of the base-plate, as shown in Fig. 5. This device, in addition to forming a substantial support for the gage, also braces the base-plate so the latter will have no tendency to bend or buckle beneath the strain imposed thereon while the machine is in operation. The sides of the horizontal portion 40 also abut against and thus reinforce one of the standards 3 and standard 25, as shown in Fig. 3. This support is struck from a single piece of sheet metal, as is also the base-plate, standards, gear-wheels, guide-disks, clamping-disks, and the gage, and consequently can be produced at low cost and readily assembled or taken apart for repairs.

By making the sharpening-wheel annular only about one-half the stock necessary in the production of a solid wheel will be required, and by mounting it in the manner described it may be removed, reversed, and again mounted upon the clamping-disks should one of its sides become worn more than the other. As the side of the wheel next to cog-wheel 26 will probably be used less than the other side, the advantage in reversing the wheel after one side has been worn almost to the adjacent clamping-disk is obvious.

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

1. In a sharpening-machine, a journaled shaft, a bushing journaled upon said shaft, means driven by the shaft for rotating the bushing faster than said shaft, and a sharpening-wheel fixed upon the bushing.

2. In a sharpening-machine, a journaled shaft, a bushing journaled upon said shaft, a train of gear-wheels driven by the shaft which rotates the bushing faster than said shaft, and a sharpening-wheel mounted upon the bushing, substantially as described.

3. In a sharpening-machine, a journaled shaft, a bushing journaled upon said shaft, a train of gear-wheels driven by the shaft which rotates the bushing faster than said shaft, a sharpening-wheel mounted upon the bushing, and a gage arranged near the periphery of the sharpening-wheel for supporting articles being sharpened, substantially as described.

4. In a sharpening-machine, a journaled shaft, a master gear-wheel rigidly mounted thereon, a bushing journaled upon said shaft having a threaded end and a shoulder near said end, a pinion rigidly mounted upon the opposite end of said bushing, intermediate gear-wheels in train with the master-gear and the pinion, a sharpening-wheel having a centrally-disposed internal flange in alinement with the shoulder, a clamping-disk mounted upon the bushing and abutting against one side of the shoulder and the flange, and a companion clamping-disk abutting against the opposite side of the flange, said clamping-disks being held in frictional engagement with the flange by a nut engaging the threaded end of the bushing, substantially as described.

5. In a sharpening-machine, a journaled shaft, a master gear-wheel rigidly mounted thereon, a bushing journaled upon said shaft having a threaded end and a shoulder near said end, a pinion rigidly mounted upon the opposite end of said bushing, intermediate gear-wheels in train with the master-gear and the pinion, a sharpening-wheel having a centrally-disposed internal shaft in alinement with the shoulder, a clamping-disk mounted upon the bushing and abutting against one side of the shoulder and the flange, a spacing-sleeve interposed between said clamping-disk and the pinion, a companion clamping-disk abutting against the opposite side of the flange, a nut engaging the threaded end of the bushing for holding the clamping-disks in frictional engagement with the flange, and an adjustable gage mounted adjacent to the sharpening-wheel, substantially as described.

6. In a sharpening-machine, a journaled shaft, a master gear-wheel mounted thereon, a bushing journaled upon said shaft, a pinion rigidly mounted upon said bushing, a pair of guide-disks rigidly mounted upon the bush-

ing at opposite sides of the pinion, intermediate gear-wheels in train with the master-gear and the pinion the intermediate gear meshing with the pinion being held from lateral movement by the guide-disks, and a sharpening-wheel mounted upon the bushing, substantially as described.

7. In a sharpening-machine, a journaled shaft, a master gear-wheel mounted thereon, a bushing journaled upon said shaft, a pinion fixed upon said bushing, a pinion meshing with the master gear-wheel, a large gear-wheel fixed to the last-mentioned pinion and intermeshing with the pinion on the bushing, a pair of guide-disks at the opposite sides of each pinion, a sharpening-wheel mounted upon the bushing, and a gage mounted adjacent to the sharpening-wheel, substantially as described.

8. In a sharpening-machine, a journaled shaft, a master gear-wheel fixed thereon, a bushing journaled upon said shaft, a pinion fixed upon said bushing, intermediate gears in train with the master-gear and the pinion, a sharpening-wheel, a clamping-disk mounted upon the bushing and abutting against one side of the sharpening-wheel, and a companion clamping-disk frictionally engaging the opposite side of the sharpening-wheel, substantially as described.

9. In a sharpening-machine, a journaled shaft, a master gear-wheel fixed thereon, a bushing journaled upon said shaft having a shoulder near one end, a pinion fixed upon the opposite end of said bushing, intermediate gears in train with the master-gear and the pinion, a sharpening-wheel having an internal flange in alinement with the shoulder, a clamping-disk mounted upon the bushing and abutting against one side of the shoulder and the flange, a companion clamping-disk abutting against the opposite side of the shoulder and the flange, and means engaging the bushing for holding said companion clamping-disk in position.

10. In a sharpening-machine, a sharpening-wheel rotatably mounted and provided at its opposite sides with grinding-surfaces, and a gage having a pair of slots converging toward their lower ends and intersecting the grinding-surfaces of said sharpening-wheel, substantially as described.

11. In a sharpening-machine, a sharpening-wheel rotatably mounted, a support arranged adjacent to said sharpening-wheel, a curved key slidably arranged in said support, and a gage pivotally secured to said support and provided with openings any one of which may be engaged by the key for the purpose set forth and described.

12. In a sharpening-machine, a base-plate, standards secured thereto, a sharpening-wheel supported by said standards, a right-angle support consisting of a horizontal portion abutting against the adjacent sides of the standards and secured at its downwardly-curved rear end to one side of the base-plate, a supporting-leg secured to the opposite side of the base-plate, and a vertical portion communicating with the forward end of said horizontal portion, in combination with a gage carried by said vertical portion.

In testimony whereof I affix my signature in the presence of two witnesses.

ALVORD M. McLERAN.

Witnesses:

F. G. FISCHER,

J. MOORE.