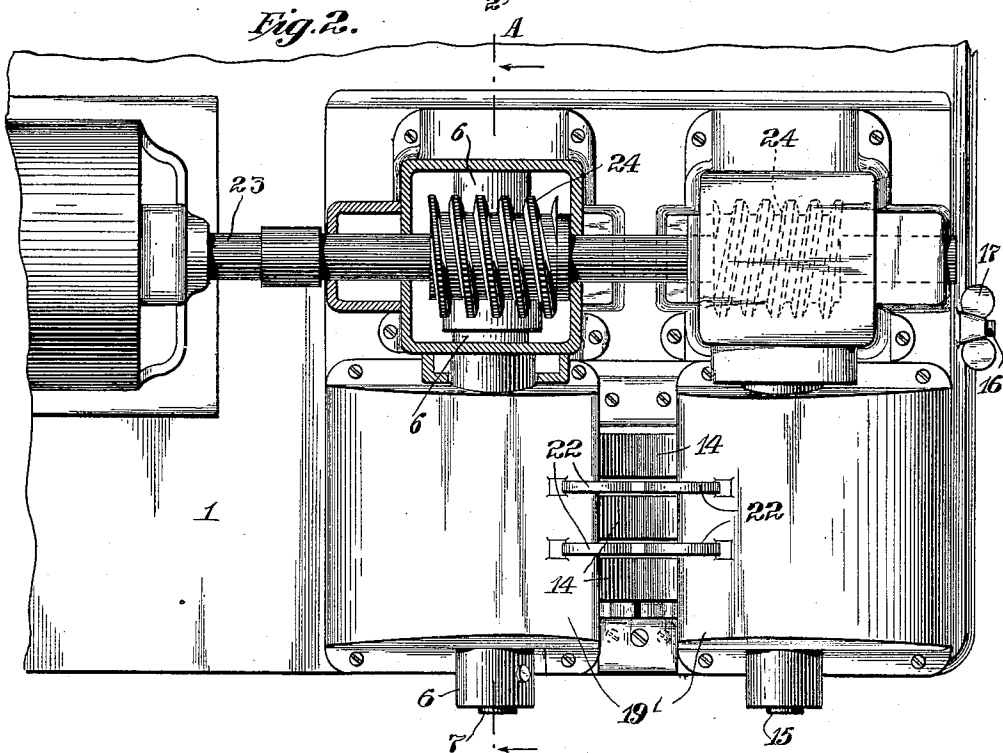
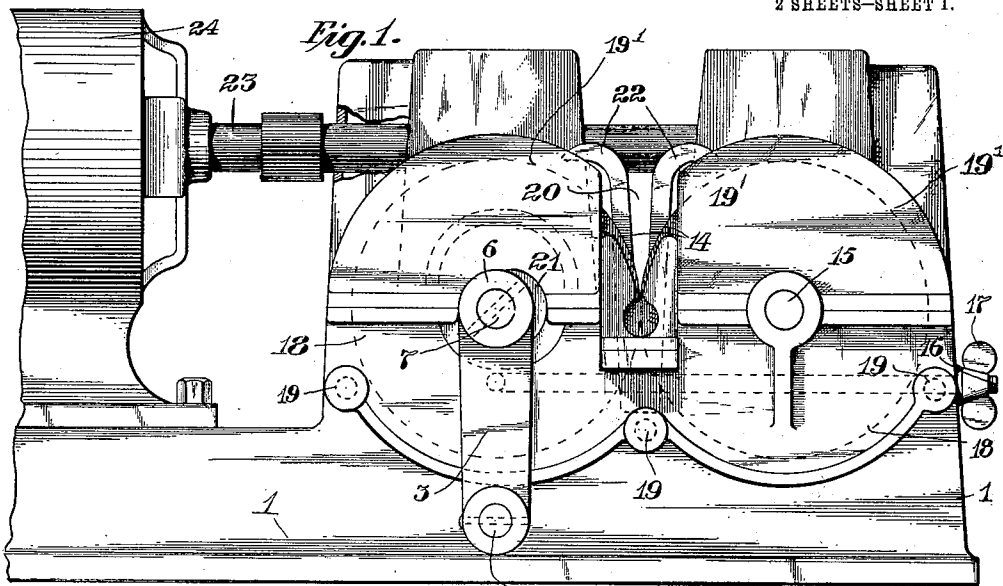


P. DAVIS.
CUTLERY POLISHING MACHINE.
APPLICATION FILED DEC. 11, 1912.

1,065,593.

Patented June 24, 1913.

2 SHEETS-SHEET 1.



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Fig. 3.

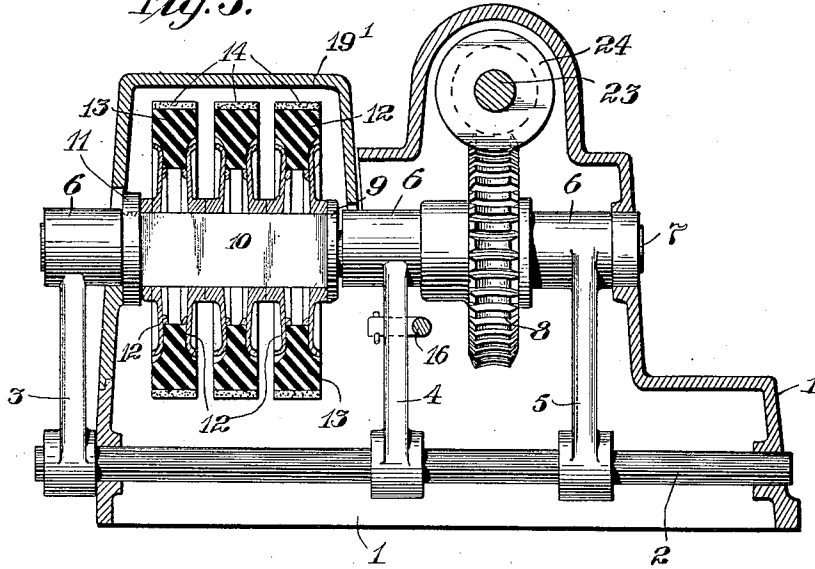
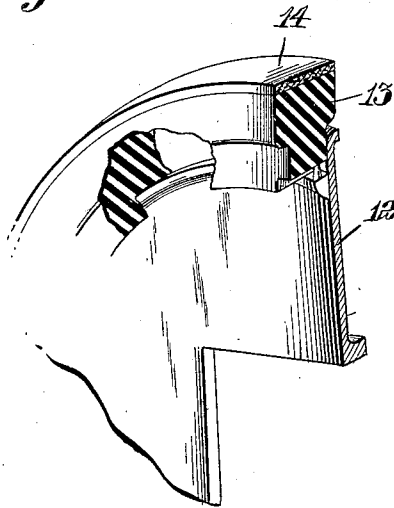


Fig. 4.



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UNITED STATES PATENT OFFICE.

PATRICK DAVIS, OF NEW YORK, N. Y.

CUTLERY-POLISHING MACHINE.

1,065,593.

Specification of Letters Patent.

Patented June 24, 1913.

Application filed December 11, 1912. Serial No. 736,087.

To all whom it may concern:

Be it known that I, PATRICK DAVIS, a citizen of the United States, residing at 2707 Kingsbridge Terrace, New York, N. Y., have invented new and useful Improvements in Cutlery-Polishing Machines, of which the following is a specification.

This invention relates to a cutlery polishing machine and more especially to machines of this character adapted to be used for polishing knives.

One of the objects of the invention is to provide a machine in which the possibility of destroying the polishing disks, upon withdrawing the polished article, is reduced to a minimum.

Another object is to provide a machine of this character in which the disks are constantly urged into contact with one another during its operation.

Another object is to provide a machine of this character in which the disks may be easily removed when it is desired to repair the same or to replace them with new disks.

Another object is to provide a machine which is simple in construction and in operation, which is not liable to get out of order, and which will be inexpensive to manufacture.

Other objects will in part be obvious and in part be pointed out hereinafter.

In the accompanying drawings showing an illustrative embodiment of the invention and in which the same reference numerals refer to similar parts in the several figures, Figure 1 is a side elevation of the machine. Fig. 2 is a plan view thereof, part being broken away for the sake of clearness. Fig. 3 is a sectional view taken on the line A—A of Fig. 2. Fig. 4 is a detail view showing the construction of one of the disks.

In the illustrative embodiment of the invention shown in the drawings, the machine comprises a frame having a base portion 1, in the side walls of which is journaled a rock shaft 2, having detachably secured thereto upwardly extending arms 3, 4 and 5. These arms are provided at their upper ends with bearings 6, in which is journaled a shaft 7, to which is secured a worm wheel 8 adapted to be driven in a manner hereinafter described. Upon the shaft 7 is mount-

ed a square sleeve 10, which is rotatable with the shaft, being secured thereto in any suitable manner, as by a pin for example. The sleeve is provided with a shoulder 9 at one end and its other end is threaded to receive a nut 11.

Removably mounted upon the sleeve are three or more polishing disks, there being three shown in the drawing by way of illustration, although it will of course be understood that a greater number of disks could be employed if desired. Each disk comprises a pair of annular side plates 12, preferably formed of metal, which support between their outer edges a comparatively narrow ring shaped member 13 formed of rubber or the like, having a circumferential facing 14 of leather or some other suitable polishing material.

It will be understood that after placing the disks in position on the sleeve they may be held firmly in position thereon by screwing the nut 11 in place. It will also be understood that by removing the nut 11 the disks may be slid off of the sleeve 10 if it is desired to repair or replace one of them or the sleeve carrying the disks may be removed from the shaft.

A shaft 15 is rotatably supported within the frame and is held against lateral movement. This shaft 15 is provided with a worm wheel similar to the worm wheel 8 on shaft 7, and it is also provided with three or more disks similar in all respects to the disks above described, which disks are mounted upon shaft 15 in the same manner that the disks are mounted upon shaft 7. Further illustration of these parts, therefore, is deemed unnecessary.

In order to vary the pressure between the circumferences of the two sets of disks carried by the shafts 7 and 15 respectively, means are provided for moving the shaft 7 laterally. As shown, this means comprises a rod 16 secured at its inner end to one of the arms 4 and having its outer end extending outside of the frame, as clearly shown in Figs. 1 and 2. The outer end of the rod 16 is threaded and a wing nut 17 is carried thereby, which wing nut is adapted to engage with the frame of the machine. From this description it will be understood that by

turning the wing nut 17 in one direction or the other the arm 4, which is secured to the rock shaft 2, will be rotated, thereby causing the shaft 7 to be moved toward or away from the shaft 15.

In order to provide means for affording easy access to the sleeves 10 and the disks mounted thereon, the frame is shown as comprising a removable end plate 18, which is secured to the base 1 by removable fastening devices 19. The upper edge of the end plate 18 is preferably on a line with the horizontal diameters of the shafts 7 and 15. As shown in Fig. 1 the plate 18 carries the bearing for the outer end of the shaft 15, and as shown in Fig. 3, the plate 18 is positioned inside of the arm 3. Covers 19' are provided for the disks, which covers are removably secured to the frame in any suitable manner. The covers are cut away at 20 to provide a space for the instrument to be polished. As clearly shown in Fig. 1 an elongated opening 21 is provided between the cover 19' and the plate 18 to permit lateral movement of the shaft 7.

V-shaped guard members 22 are positioned between adjacent pairs of disks, which guards are supported from the covers 19 as clearly shown in Figs. 1 and 2.

The disks are rotated in opposite directions through the medium of a driving shaft 23 provided with oppositely disposed worms 24, which are in engagement with the worm wheels 8 secured to shafts 7 and 15. The worms 24 are so positioned that when the machine is being operated the pressure of the worms upon the worm wheels will tend to force the movable shaft 7 toward the fixed shaft 15. The driving shaft 23 may of course be driven in any suitable manner; as shown it is driven by a motor 24 which is mounted on an extension of the base 1. It is understood, however, that this invention is not to be limited to this precise way of driving the shaft 23.

The worms 24 are preferably protected by removable covers 25 secured to the base of the frame in any suitable manner.

The operation of the machine, which should be largely obvious from the above description, is as follows: When it is desired to polish a knife for example, the motor is started thereby causing the disks to rotate in opposite directions, the disks on shaft 7 rotating in a clock-wise direction as viewed in Fig. 1, and the disks on shaft 15 rotating in an anti-clock-wise direction. It will of course be understood that the position of the shaft 7 relatively to the shaft 15 will be adjusted by means of nut 17 and rod 16 to provide the proper circumferential engagement of the disks with one another. The knife is then inserted between the disks from the top and is polished in the usual manner when using machines of this character. After the

knife is polished it is withdrawn by a longitudinal outward movement and by reason of the fact that three or more comparatively narrow disks are used, there will be less tendency for the knife to cut the polishing surfaces of the disks than is the case where one or two comparatively wide disks are employed. During the polishing of the knife any tendency of the disks to be separated by the insertion of the knife between them will be overcome by reason of the fact that the worms are so positioned that they tend to force the disks on the movable shaft into engagement with the disks on the fixed shaft.

If it is necessary to repair or replace one of the disks it is merely necessary to remove the covers 19 and the outer arm 3, after which the end plate 18 may be removed, thereby affording free access to the disks and means for supporting them on the sleeves 10.

Having described this invention in connection with the illustrative embodiment thereof to the details of which disclosure the invention is not of course to be limited, what is claimed as new and what is desired to be secured by Letters Patent is set forth in the appended claims:—

1. In a cutlery polishing machine, in combination, a frame, a pair of shafts rotatably mounted therein, rocking arms pivotally mounted on said frame and supporting one of said shafts whereby the latter is movable in a lateral direction, co-acting disks carried by said shafts, and means for rotating said shafts in opposite directions, said means comprising gear wheels mounted on said shafts and driving means engaging said wheels, the points of engagement of said driving means with said wheels and the pivotal points of support of said arms lying on opposite sides of the shafts, whereby the movable shaft will be constantly urged toward the other shaft.

2. In a cutlery polishing machine, in combination, a frame, a pair of shafts rotatably mounted therein, rocking arms pivotally mounted on said frame and supporting one of said shafts whereby the latter is movable in a lateral direction, co-acting disks carried by said shafts, worm wheels secured to said shafts, a driven shaft and oppositely disposed worms on said driven shaft operatively engaging said worm wheels, the points of engagement of said worms with said wheels and the pivotal points of support of said arms lying on opposite sides of the shafts, whereby the movable shaft will be constantly urged toward the other shaft.

3. In a cutlery polishing machine, in combination, a frame, a pair of shafts rotatably mounted therein, one of said shafts being movable in a lateral direction, co-acting disks carried by said shafts, worm wheels secured to said shafts, a driven shaft and

oppositely disposed worms on said driven shaft operatively engaging said worm wheels, the worm which engages the worm wheel on said transversely movable shaft being arranged to constantly urge said shaft toward the other of said shafts.

5 4. In a cutlery polishing machine, in combination, a frame comprising a base, an end plate detachably secured thereto and remov-

able cover plates, and polishing disks rotatably supported in said frame.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PATRICK DAVIS.

Witnesses:

ERNEST F. GAMS,
FRED. C. ROSCHER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."