

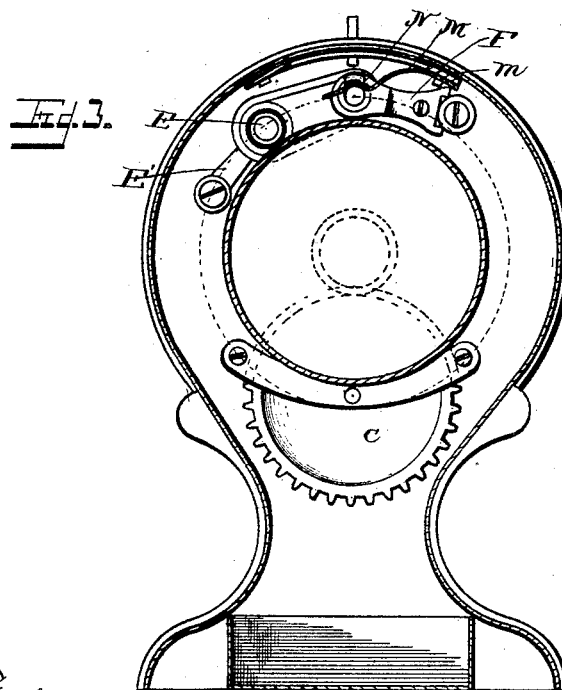
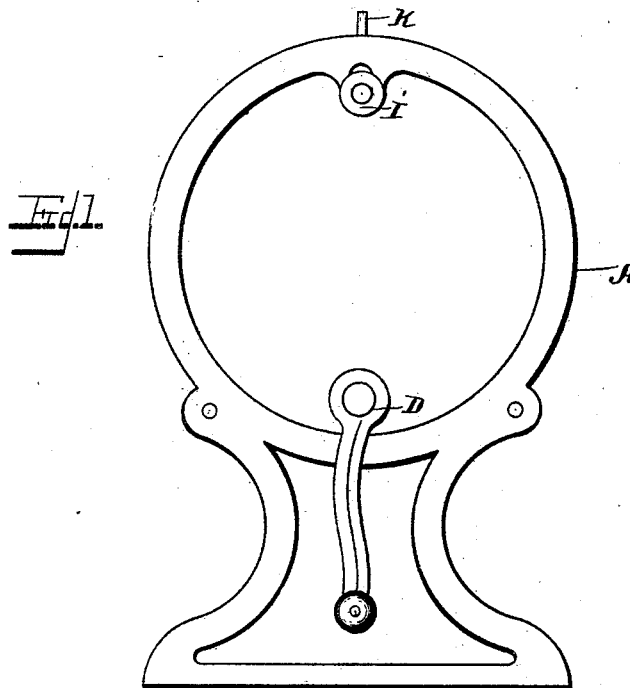
(No Model.)

2 Sheets—Sheet 1.

J. D. MILLS & G. C. McDERMOTT.
PENCIL SHARPENER.

No. 459,180.

Patented Sept. 8, 1891.



Witnesses
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Alfred Stewart

Inventors
John D. Mills and
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their Attorneys

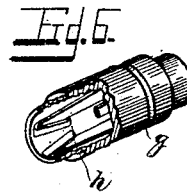
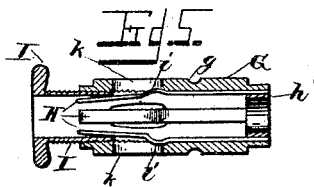
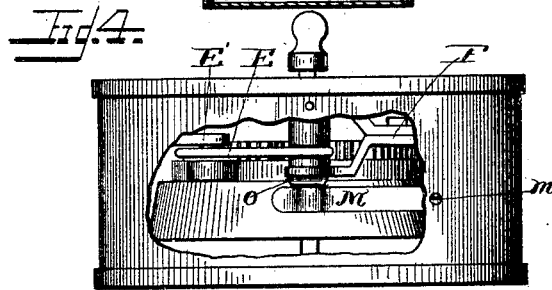
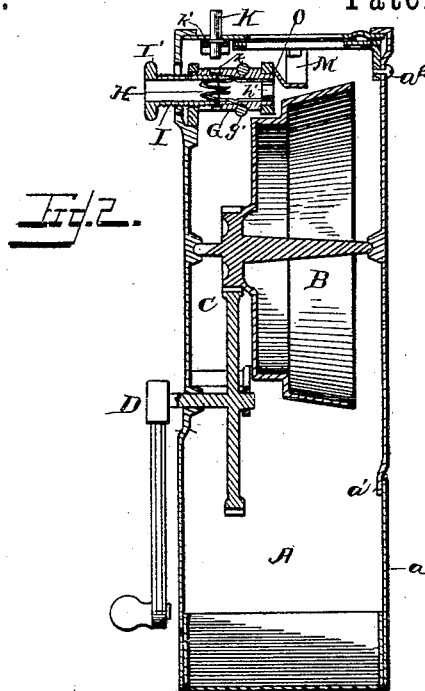
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J. D. MILLS & G. C. McDERMOTT.
PENCIL SHARPENER.

No. 459,180.

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Witnesses
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UNITED STATES PATENT OFFICE.

JOHN DIX MILLS AND GEORGE C. McDERMOTT, OF CINCINNATI, OHIO; SAID
MILLS ASSIGNOR TO SAID McDERMOTT.

PENCIL-SHARPENER.

SPECIFICATION forming part of Letters Patent No. 459,180, dated September 8, 1891.

Application filed May 25, 1891. Serial No. 394,027. (No model.)

To all whom it may concern:

Be it known that we, JOHN DIX MILLS and GEORGE C. McDERMOTT, both of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Pencil-Sharpener; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

This invention has for its object to improve the pencil-sharpener set forth in the Patent No. 448,723, dated March 24, 1891, particularly with respect to the mechanism for holding the pencil while being sharpened.

The invention consists in certain novel details of construction and combinations and arrangements of parts to be now described, and pointed out particularly in the appended claims.

Referring to the accompanying drawings, Figure 1 is a front elevation of a sharpener made in accordance with our invention. Fig. 2 is a section through the sharpener. Fig. 3 is a section at right angles to Fig. 2, showing only the pencil-holder and adjacent parts. Fig. 4 is a top plan with part of the casing broken away. Fig. 5 shows a modified form of holder. Fig. 6 is a holder without an adjusting-screw.

Similar letters of reference in the several figures indicate the same parts.

The casing A of the machine is similar in appearance to that in the said former patent; but to permit of ready access to the internal parts the back is divided and the lower portion *a* secured permanently to the casing, while the upper portion is held by a lip *a'*, fitting inside of the lower part, and a set-screw *a²* at the top, as shown in Fig. 2. Inside of the casing the general arrangement of the parts is substantially the same as in said patent, the frusto-conical abrading-wheel B being journaled at the center with the gearing C, having the crank D thereon below the same. Above and at one side of the center of the abrading-wheel is the drive-wheel E for the pencil-holder or chuck, journaled in

the pivoted frame E', and on the other side of the center is the pivoted chuck-frame F, having the journals for the chuck centrally above the abrading-wheel and in line with the pencil-opening. The chuck or pencil-holder in the present instance consists of a tubular body portion G, having a groove or belt-wheel *g* formed thereon, in which the elastic belt *g'* works.

Within the cylindrical opening of the chuck is arranged a series of spring retaining-fingers H, each formed of thin metal and having the ends *h* turned back upon themselves or inward to form a conical recess for the entry of the pencil and further to form holding-points to prevent the independent rotation of the pencil and chuck. These fingers are preferably struck up and held in place by a ring *h'* inserted at the inner end of the chuck and driven tightly, no soldering or other fastening then being necessary.

When the sharpener is made to operate upon one size of pencil, no difficulty will be experienced in adjusting the spring-arms to hold the same tightly; but when pencils of different sizes are to be sharpened or where it is desired to grasp the pencil with a firm grip provision is made for closing the spring-arms more or less, as follows: The outer end of the chuck is threaded internally, and screwing into the same is a tubular movable clutch member I, the end of which passes outside of the spring-arms, and as it passes in forces the arms together and grips the pencil tightly or reduces the size of the aperture between the arms and through which the pencils pass. Hence the device may be adjusted for large or small pencils. We prefer to form inclines on the spring-arms, as at *i*, and where the movable clutch member is employed the inwardly-turned ends of the spring-arms may be omitted, as in Fig. 5. The outer end of the movable clutch member projects through the pencil-opening in the casing and is provided with a milled head I' to facilitate its adjustment, and the body of the chuck *i* is prevented from turning while setting up the movable member by the pin K, journaled in the casing and adapted to co-operate with

the openings or recesses *k* in the body of the chuck, as will be readily understood, the pin being at once returned to normal position by the spring *k'* when pressure upon it is relieved.

In front of the chuck we provide in the present instance a pressing-finger *M*, adapted to rest upon the point of the pencil being formed to hold the same in place and prevent breakage, as well as to impart thereto a smooth finish. In the preferred form the finger is simply a flat spring secured to the casing at *m* and having a concavity *N* at the end for the point of the pencil. On the side next the chuck a small incline *O* is formed to facilitate the entry of the pencil.

When operating the device, the pencil is inserted from the outside, and if it is desired to grasp the same firmly the pin *K* is pressed in to hold the body of the chuck while the movable member is set up, when the handle may be turned and the pencil sharpened in the usual manner.

Having thus described our invention, what we claim as new is—

1. In a pencil-sharpener, the combination, with the abrading-wheel and the chuck or pencil-holder, of the rigidly-supported spring pressure-finger co-operating with the point being formed on the pencil, substantially as described.

2. In a pencil-sharpener, the combination, with the abrading-wheel and the chuck or pencil-holder, of the pressure-finger having the concavity therein for the point being formed, and the incline next the chuck to facilitate the entrance of the pencil, substantially as described.

3. In a pencil-sharpener, the combination, with the abrading-wheel and the chuck or pencil-holder, of the spring-finger secured to the casing and having the concavity for co-operating with the point being formed on the pencil in front of the chuck, and the incline adjacent the chuck, substantially as described.

4. In a pencil-sharpener, the combination of the pencil-holder or chuck having the spring retaining-fingers with inwardly-turned ends

forming a conical opening for the entry of the pencil, substantially as described.

5. In an abrading-wheel pencil-sharpener, the combination, with the pencil-holder or chuck having the spring retaining-fingers rigidly held within the same and projecting away from said wheel, of the movable tubular chuck member screwed into the chuck-body and co-operating with said fingers to compress the same, substantially as described.

6. In a pencil-sharpener, the combination, with the pencil-holder or chuck having the spring retaining-fingers, and the movable tubular chuck member screwed into the chuck to compress the fingers, of the pin co-operating with recesses or depressions on the chuck to prevent its rotation while the movable member is being set up, substantially as described.

7. In a pencil-sharpener, the combination, with the chuck, of the spring retaining-fingers within the same, and the ring driven inside of said fingers to hold them in place, substantially as described.

8. In a pencil-sharpener, the combination, with the casing, the abrading-wheel journaled therein, and the crank-handle, of the chuck journaled within the casing, the drive-wheel co-operating with said chuck also journaled within the casing, and the movable chuck member projecting through the casing and having the head thereon, substantially as described.

9. In a pencil-sharpener, the combination, with the casing, the abrading-wheel journaled therein, and the crank-handle, of the chuck journaled within the casing, the movable chuck member projecting through the casing and having the head thereon, and the spring-pin passing through the casing and co-operating with the chuck to prevent its rotation when the movable member is set up, substantially as described.

JOHN DIX MILLS.
GEO. C. McDERMOTT.

Witnesses:

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