(No Model.)

M. RUSH.

PENCIL SHARPENER.

No. 353,761. Patented Dec. 7, 1886.

Fig. 1.

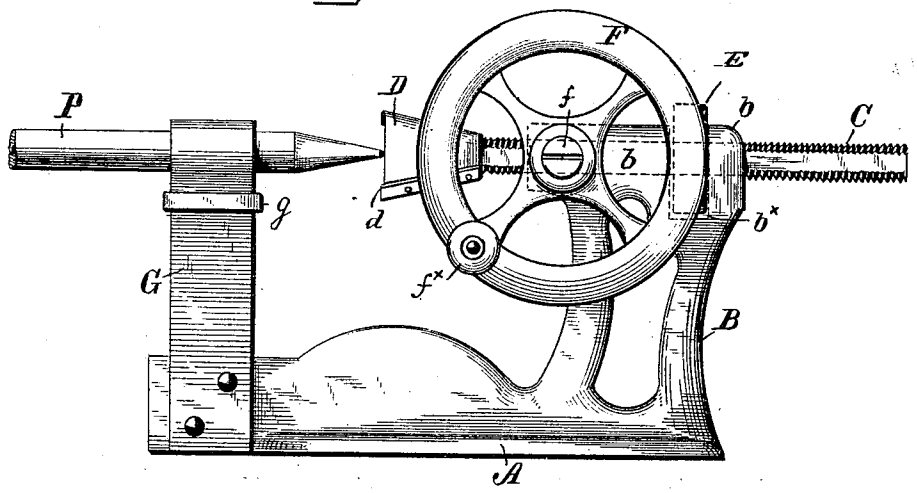


Fig. 2.

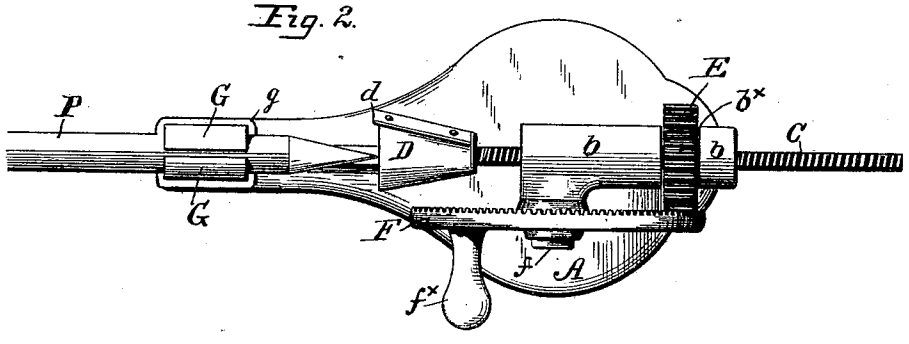


Fig. 3.

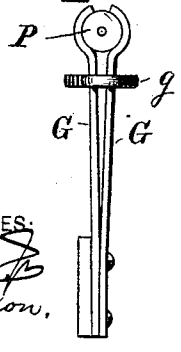


Fig. 4.

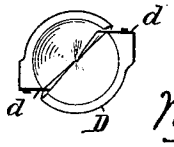
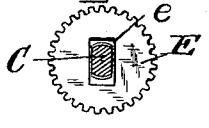


Fig. 5.



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UNITED STATES PATENT OFFICE.

MADISON RUSH, OF PHILADELPHIA, PENNSYLVANIA.

PENCIL-SHARPENER.

SPECIFICATION forming part of Letters Patent No. 353,761, dated December 7, 1886.

Application filed July 17, 1886. Serial No. 208,230. (No model.)

To all whom it may concern:

Be it known that I, MADISON RUSH, a citizen of the United States, residing in the city and county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Pencil-Sharpeners, of which the following is a specification.

The object of my invention is the construction of an inexpensive, durable, and easily-operated device for automatically pointing or sharpening lead and other pencils.

A device embodying a good form of my improvements is represented in the accompanying drawings and described in this specification, the particular subject-matter claimed as novel being hereinafter definitely specified.

In the drawings, Figure 1 is a side elevation of my entire device; Fig. 2, a top plan view of the same. Fig. 3 is an end elevation of the pencil-holding jaws. Fig. 4 is an inside face elevation of the sharpening-thimble, and Fig. 5 a side elevational detail of the pinion which is mounted upon the cutter-actuating shaft.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents a base, from which is erected a standard, B, the base and standard together forming the frame-work of the device.

The upper portion of the standard is formed into or provided with a horizontal tubular internally-threaded bearing, *b*, within which is fitted and adapted to travel longitudinally in either direction what I term a "cutter-actuating screw," C, the same being an externally-threaded rod, which would be cylindrical except for the fact that it is flattened, or has its sides dressed off in parallel opposite planes, as represented in the drawings. At its advance extremity the said screw is provided with a conical cutter, herein termed the "sharpening-thimble," D, which is of a general character well known as a pencil-sharpening device, but which I prefer to provide with two blades or cutters, *d d*, in order to secure a more uniform action upon the pencil.

Upon the advance rotation of the cutter-actuating screw through its threaded bearing, the cutter is caused both to rotate and to advance with said screw. The means which I employ for effecting the rotation and advance or retreat of the cutter-actuating screw and its applied thimble is a toothed pinion, E, Fig. 5, having a rectangular axial slot or eye, *e*, which is long enough to clear the threads of the screw and wide enough to closely but not tightly embrace its flattened sides, the said pinion being mounted upon said screw and located in a pinion-seat, $b^{\times}$, formed in the bearing *b*, and its teeth being engaged with the teeth of the bevel-wheel F, which is vertically mounted upon a fixed shaft or axis, *f*, horizontally applied to the side of the bearing *b*. The said bevel-wheel is conveniently provided with a handle, $f^{\times}$; but it may, if desired, be rotated by power.

It is obvious that the rotation of the bevel-wheel will, through its engagement with the pinion, occasion, by reason of the mounting of said pinion upon the cutter-actuating shaft, the rotation of said shaft in unison with said pinion, and its consequent advance or retraction, according to the direction of rotation of said pinion through its bearing.

It is manifest, of course, that the cutter-actuating shaft moves longitudinally with equal facility in either direction through its bearing and through the pinion, the latter being maintained against any movement other than one of rotation by the seat $b^{\times}$, within which it is mounted.

The pencil which is to be pointed is mounted to face the sharpening-thimble, a convenient retaining device being a pair of spring-jaws, G G, erected from the base of the frame-work, conformed at their upper extremities to receive the pencil, normally set so as to stand apart a sufficient distance to freely permit the introduction of the pencil, and yet adapted to be clamped together, after the manner of a grip, upon the pencil by means of a sliding collar, *g*, embracing both jaws and adapted to be slid up or down upon them. The spring-jaws are a convenient pencil-holding device. Other contrivances may, however, be substituted in their stead.

The operation of the contrivance will be readily understood. The pencil having been fixedly engaged in the pencil-holding jaws by slipping the collar up upon the latter, rotation is then to be imparted to the bevel-wheel in a direction such as to occasion, through the pinion, the advance rotation of the cutter-actuating shaft, with the result that the sharpening-

thimble is caused to advance against the pencil and to rotate upon its extremity, so as to cut a tapering end upon it or sharpen it.

The speed of rotation of the thimble and also the speed of its advance are regulated by the pitch of the thread upon the cutter-actuating screw and by the diameters of the pinion and bevel wheel.

It is obvious that instead of flattening or dressing off a portion of the threads of the actuating-screw and providing the pinion with a rectangular eye or slot, the pinion may be feathered upon the screw in any well-known and convenient manner.

While I prefer to employ a conical two-bladed thimble of the character represented, it is obvious that other sharpening devices may be applied to the screw in its stead.

Having thus described my invention, I claim—

1. The combination of a pencil holding or supporting device, a pencil-sharpening device, an actuating-screw upon which said pencil-sharpening device is mounted in permanent alignment with said holding device, and by which it is progressively advanced, a fixed bearing through which said actuating-screw rotates in order progressively to advance said pencil-sharpening device, and means for occasioning the rotation of said actuating-screw and its connected sharpening device, substantially as set forth.

2. The combination of a pencil holding or supporting device, a pencil-sharpening device, an actuating-screw upon which said pencil-sharpening device is mounted in alignment with said holder, a fixed bearing through which said actuating-screw rotates, a pinion feathered upon said actuating-screw and retained against longitudinal movement with or upon said screw, and a bevel-wheel engaged with said pinion, substantially as set forth.

3. The combination of the spring-jaws, a threaded bearing erected upon a frame-work also supporting said spring-jaws, a cutter-actuating screw fitted within said bearing, a sharpening-thimble connected with the advance extremity of said actuating-screw, a pinion feathered upon said actuating-screw and located within a pinion-seat formed in said frame-work, and a bevel-wheel engaged with said pinion, substantially as and for the purposes set forth.

In testimony whereof I have hereunto signed my name this 15th day of July, A. D. 1886.

MADISON RUSH.

In presence of—

J. BONSALL TAYLOR,

WM. C. STRAWBRIDGE.