(No Model.)

J. BIGHAM.

PENCIL SHARPENER.

No. 419,307. Patented Jan. 14, 1890.

Fig. 1

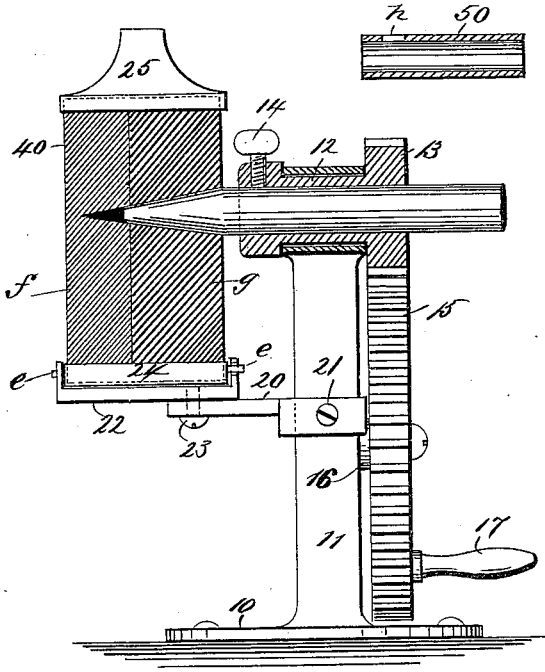


Fig. 3

Fig. 2

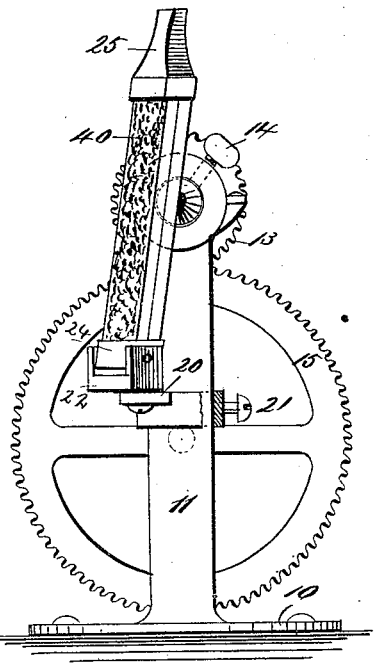


Fig. 5

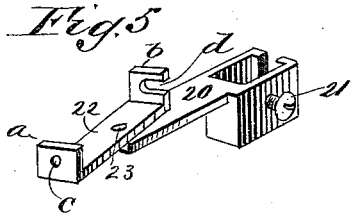


Fig. 6

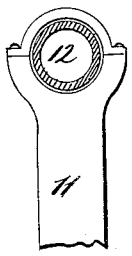
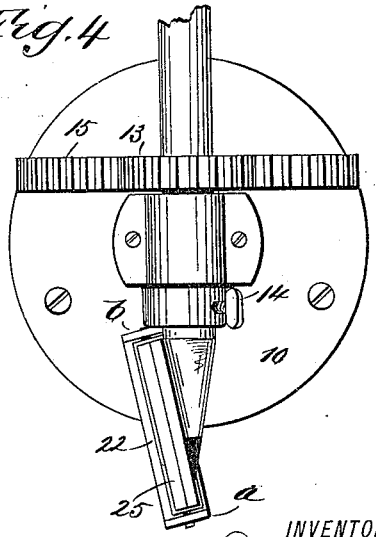


Fig. 4



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JOHN BIGHAM, OF RIPON, WISCONSIN.

PENCIL-SHARPENER.

SPECIFICATION forming part of Letters Patent No. 419,307, dated January 14, 1890.

Application filed May 21, 1889. Serial No. 311,548. (No model.)

To all whom it may concern:

Be it known that I, JOHN BIGHAM, of Ripon, in the county of Fond du Lac and State of Wisconsin, have invented a new and Improved Pencil-Sharpener, of which the following is a full, clear, and exact description.

This invention relates to pencil-sharpeners, the object of the invention being to provide a simple, effective, cheap, and durable machine that is applicable for use in the sharpening of lead or slate pencils; and to the end named the invention consists, essentially, of a pencil-receiving shaft, a means for revolving the same, a means for holding the pencil therein, and a grinder arranged to be brought to bear upon the pencil, all as will be hereinafter fully explained, and specifically pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a side view of my improved pencil-sharpener, parts being shown in section. Fig. 2 is a front view of the sharpener, parts being broken away. Fig. 3 is a sectional view of a sleeve that is employed when pencils of less than the standard diameter are to be ground. Fig. 4 is a plan view of the sharpener. Fig. 5 is a perspective view of the grinder-supporting bracket, and Fig. 6 is a cross-sectional view of the hollow shaft and the upper portion of its supporting-standard.

In the drawings, 10 represents a base-plate, which is arranged for connection with any fixed support, such as a table, counter, desk, &c. This base-plate carries a vertical standard 11, at the upper end of which there is mounted a hollow shaft 12, formed or provided with a small gear or pinion 13 and with a set or binding screw 14. The gear 13 is engaged by a large driving-gear 15, said gear 15 being mounted upon a stud 16, which extends outward from the standard 11, and in order that a rotary motion may be readily imparted to the shaft 12, I provide the gear 15 with a handle 17.

Upon the standard 11 is mounted a bracket 20, which is adjustably held to the standard by a set-screw 21, and upon this bracket 20, I mount a plate 22, that is adjustably held to the bracket by means of a set or binding screw 23. The plate 22 is provided with vertical flanges *a* and *b*, the flange *a* being apertured, as shown at *c*, while the flange *b* is slotted, as shown at *d*, this arrangement being adopted in order to provide for the easy insertion and withdrawal of a grinder-supporting socket 24, which said socket is provided with pintles *e*, that rest in the aperture *c* and slot *d*, as represented in the drawings.

The socket 24 serves as the support for the lower end of the grinder 40, and this grinder may be made up in any proper manner; but in practice I prefer that one face of the grinder should consist of solid emery or other similar abrading material, and that the other surface should be a steel file made in two or more grades of coarseness, as represented in Fig. 1, the file-section *f* being for the graphite point of the pencil, while the coarser section *g* is intended to operate upon the wood of the pencil. To the upper end of the grinder is secured a socket 25, which serves as a handle.

In operation, the pencil is passed in through the bore of the hollow shaft 12 and there clamped to place by the set-screw 14. The handle 17 is then grasped and a rotary motion imparted to the gear 15, and as the gear 15 so turns the shaft 12 will be turned and with it the pencil. As the pencil is turning, as just above described, the upper socket of the grinder is grasped and the grinder-surface brought to bear upon the pencil-point, a proper angle being secured by adjusting the plate 23 upon the bracket 20, as will be readily understood.

As the surface of the grinder wears away the bracket may be raised or lowered so as to bring an unworn surface into operative position.

By forming one of the flanges of the plate 22 with a pintle-receiving slot I provide for the ready removal and readjustment of the grinder at times when it is desired to change the surface of the grinder—that is, when it is desired to sharpen lead-pencils instead of slate-pencils, or vice versa.

The bore of the shaft 12 is of proper size to receive pencils of standard diameter; but

when pencils of smaller diameter or slate-pencils are to be sharpened a sleeve 50, such as the one shown in Fig. 3, is employed, the sleeve being of proper diameter to fit snugly within the shaft 12, and in order that the pencil may be held within the sleeve 50, I form said sleeve with an aperture *h*, through which the point of the set-screw 14' passes, to bear upon the peripheral face of the pencil.

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

1. In a pencil-sharpener, the combination, with a standard, of a hollow rotary shaft in the upper end of the standard and a grinder adjustably secured to the said standard, substantially as described.

2. In a pencil-sharpener, the combination, with a standard, of a hollow shaft journaled in the upper end of the standard, means for revolving the shaft, a bracket secured to the standard, a plate adjustably secured to the bracket, and a grinder detachably secured to the plate, substantially as herein shown and described.

3. In a pencil-sharpener, the combination, with a standard, of a hollow shaft mounted in the upper end of the standard and provided with a pinion 13, the gear-wheel 15, meshing with the pinion and provided with the handle 17, and a stationary grinder carried by the standard, substantially as herein shown and described.

4. In a pencil-sharpener, the combination, with a standard, of the bracket 20, secured to the standard, the plate 22, adjustably secured to the bracket and provided with flanges *a b*, having aperture *c* and slot *d*, respectively, and a socket-grinder holder 24, provided with pintles *e*, substantially as herein shown and described.

5. In a pencil-sharpener, the combination, with a hollow shaft, of a set-screw 14, a gear 13, carried by the shaft, a gear 15, which engages the gear 13, a bracket 20, a plate 22, adjustably connected to the bracket, flanges which extend upward from the plate, one of said flanges being apertured and the other slotted, a socket 24, formed with pintles adapted to enter the flange aperture and slot, and a grinder mounted in the socket, substantially as described.

6. In a pencil-sharpener, the combination, with a hollow rotary shaft and a set-screw for locking a pencil in the shaft, of an apertured sleeve adapted to be inserted in the shaft with the point of the set-screw projecting through the aperture thereof, substantially as and for the purpose set forth.

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