(No Model.)

F. WORN.

PENCIL SHARPENER.

No. 338,904. Patented Mar. 30, 1886.

Fig. 1.

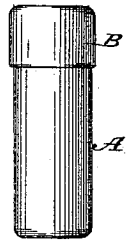


Fig. 2.

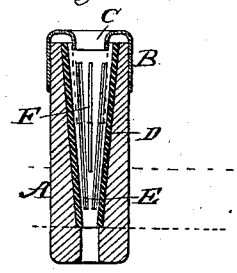


Fig. 4.

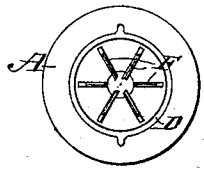


Fig. 3.

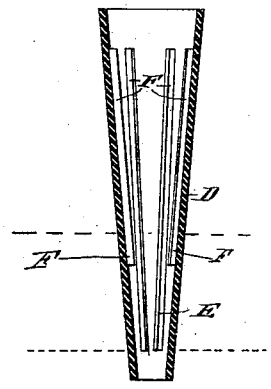


Fig. 5.



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UNITED STATES PATENT OFFICE.

FRANK WORN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO DANIEL FITZPATRICK, OF SAME PLACE.

PENCIL-SHARPENER.

SPECIFICATION forming part of Letters Patent No. 338,904, dated March 30, 1886.

Application filed September 25, 1885. Serial No. 178,156. (No model.)

To all whom it may concern:

Be it known that I, FRANK WORN, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Pencil-Sharpeners, of which the following is a full, clear, and exact description.

This invention consists, first, in a pencil-sharpener, of an exterior case having a recess therein and a correspondingly-shaped detachable holder fitted thereto, with a series of sharpening-blades, substantially as herein described; second, in a pencil-sharpener, a holder provided with a number of sharpening-blades of different lengths, substantially as herein set forth; third, a pencil-sharpener constructed, substantially as herein described, so as to present two bearing-surfaces to support a pencil above its point, substantially as herein set forth; fourth, in a pencil-sharpener, a detachable cap having a return-bearing therein to receive and support a pencil while being sharpened.

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

Figure 1 represents a side elevation of my improved pencil-sharpener complete. Fig. 2 is a longitudinal central section of Fig. 1. Fig. 3 is a longitudinal central section of the interior holder detached from the outer case and enlarged, and represents the sharpening-blades of different lengths secured therein. Fig. 4 is a top view or plan of Fig. 1, showing the sharpening-blades converging to a common center. Fig. 5 is a side elevation of a part of a pencil sharpened at one end, and the dotted lines indicating the lower bearing against the shorter sharpening-blades, which are to support the lower end of the pencil centrally between them.

A in the accompanying drawings represents an exterior case, of any suitable material, having a recess therein, and to which is fitted a detachable cap, B, having a central opening, with a return-bearing, C, through which a pencil to be sharpened is introduced, as shown in Fig. 2. To this recess, in the outer case, A, is fitted a correspondingly-shaped detachable holder, D, to which is secured a series of sharpening-blades, E F, of different lengths, in any convenient manner. These sharpening-blades converge to a common center on the inner tapered surface of the holder D, as shown in Figs. 2, 3, and 4.

In order to obtain a sharp point, and to maintain the pencil centrally in the sharpening-blades while being sharpened to prevent breaking off its point, the sharpening-blades are made of different lengths, so that the shorter blades F, in the operation of sharpening, will form a bearing centrally above the point of the pencil, which, together with the upper bearing, C, will support the pencil at two places above the point, and thereby prevent any other than a longitudinal movement thereof to destroy the point while being sharpened.

The upper bearing, C, in the cap B may be made flexible, so as to receive pencils of different diameters, or interchangeable caps with bearings of various diameters may be provided, and this return-bearing C may be extended downwardly between the sharpening-blades as far as desired without interfering with them, as shown in dotted lines, Fig. 2.

By this construction and arrangement of holder and sharpening-blades a pencil to be sharpened will be held firmly and centrally between the blades, so as to obtain a sharp point without danger of breaking it off.

The sharpening-blades E F may be adjustable in the holder, so as to vary the point more or less, and to change the lower bearing of the shorter blades up or down, as required.

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

1. In a pencil-sharpener, in combination with an outer case, A, having a tapered recess and provided with a removable cap, B, having a return central support with an opening through which a pencil is introduced to be sharpened, the removable tapered holder D and the series of converging sharpening-blades E F, of different lengths, secured thereto, the holder D and case A having openings at their lower ends through which the cuttings from a pencil being sharpened may es-

cape therefrom, substantially as herein described and shown.

2. In a pencil-sharpener consisting of an exterior case, A, having a tapering recess, to which is fitted a detachable correspondingly-tapered holder, D, a series of independent knives or sharpening-blades, E F, of different lengths, secured to this tapering holder D, substantially as and for the purpose herein described and shown.

FRANK WORN.

Witnesses:
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J. R. MASSEY.