E. P. Needham,

Pencil Sharpener.

No. 112,951. Patented Mar. 21, 1871.

Fig. 1.

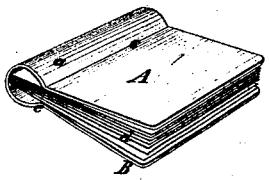

Fig. 2.

Witnesses.

Fred Haynes

Henry J. Ronn

E. P. Needham

United States Patent Office.

ELIAS P. NEEDHAM, OF NEW YORK, N. Y.

Letters Patent No. 112,951, dated March 21, 1871.

IMPROVEMENT IN PENCIL-SHARPENERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ELIAS P. NEEDHAM, of the city, county, and State of New York, have invented a new and improved Pencil-Sharpener; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing forming a part of this specification.

This invention is principally designed to be used for those pencils whose leads are removable, but it is also applicable to other lead as well as slate-pencils.

It consists of two plates, so connected, or of a single plate so bent, as to form two leaves, that such plates or leaves present themselves at an angle to each other corresponding to the profile of the point to be produced with opposed cutting or abrading-surfaces of interposed leaves of sand-paper, or other cutting or abrading fabric or material, which are made to act upon the pencil to produce the point, by turning or otherwise moving it between them.

In the accompanying drawing—

Figure 1 represents a perspective view of my pencil-sharpener, and

Figure 2 is a side view of the same, illustrating its application.

Similar letters of reference indicate corresponding parts in both figures.

The pencil-sharpener represented in the drawing consists of a single rectangular metal plate, bent along its middle to form two connecting leaves, A B, something like the covers and back of a book, the connecting or bent portion being made to form a spring bow, *a*, whose junction with the leaves forms two ridges, *e e*, which bite and hold a number of interposed leaves, *d d*, of sand or emery-paper.

The said leaves A B are so inclined to each other that their ends form a flaring opening for the insertion of the pencil or lead to be sharpened, as represented at C in fig. 2.

The leaves A B are roughened on their inner side with a file cut or coated with sand, emery, or other abrading material.

The sheets of interposed sand or emery-paper *d d* are of a size and shape to fit within the leaves A B and bow *a*. They are secured in place by the ridges *e e* on the plate, as before described, and when worn out can be withdrawn by holding the plates open with the hand, and fresh ones can be inserted in their place.

To sharpen the lead or pencil, it is simply inserted between the sheets of sand or emery-paper, and turned or otherwise moved and rubbed till worn away to a point, the elasticity of the plates and the yielding character of the paper preventing the breakage to which the lead would be liable if treated similarly between rigid surfaces.

It is obvious that instead of two leaves, A B, made of a single plate, being used, the leaves may be composed of separate plates united by rivets, screws, or other means, and that the rivets used to hold them may serve as the means of securing the paper between them.

It is desirable, however constructed, that the plates or leaves shall be so formed or connected that the pressure produced on the pencil between them shall be of an elastic or yielding character.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of two elastically-connected inclined plates or leaves, A B, and the interposed sheets or leaves of sand-paper or other similar cutting or abrading material, substantially as herein described.

E. P. NEEDHAM.

Witnesses:

HENRY T. BROWN,

FRED. HAYNES.