(No Model.)

H. M. DIXON.

PENCIL SHARPENER.

No. 564,823. Patented July 28, 1896.

Fig: 1.

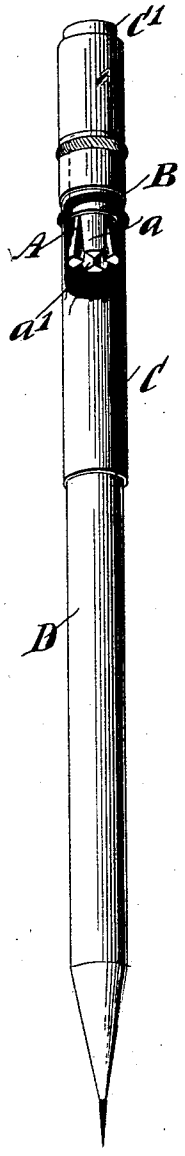


Fig: 2.

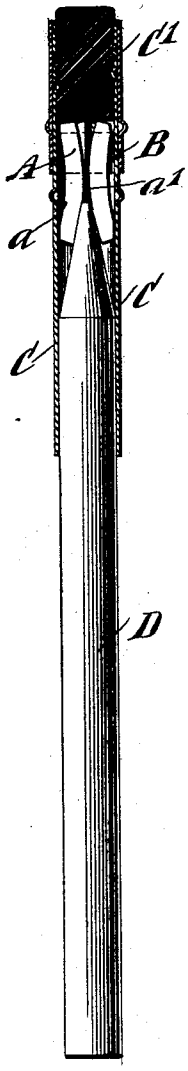


Fig: 3.

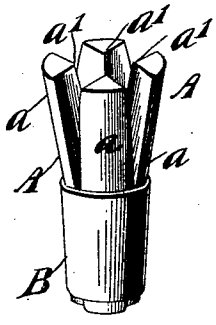
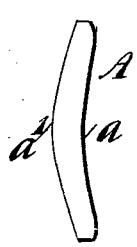


Fig: 4.



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HENRY M. DIXON, OF BROOKLYN, NEW YORK.

PENCIL-SHARPENER.

SPECIFICATION forming part of Letters Patent No. 564,823, dated July 28, 1896.

Application filed December 26, 1895. Serial No. 573,286. (No model.)

To all whom it may concern:

Be it known that I, HENRY M. DIXON, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Pencil-Sharpener, of which the following is a full, clear, and exact description.

My invention relates to pencil-sharpeners adapted to be contained in the barrel or sleeve in which the end of the pencil is to be introduced and in which the erasing material is usually contained.

The object of the invention is to provide a pencil-sharpener adapted to be reversible and comprising a number of independent knives grouped together in such manner as to receive the point of the pencil between them, the particular object of the invention being to provide for a quick and proper sharpening of the point of the lead.

A further object of the invention is to construct the pencil-sharpener in an exceedingly simple, durable, and economic manner.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

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

Figure 1 is a side elevation of a pencil and a barrel in which the pencil is introduced, the barrel being broken away to disclose the sharpener in position. Fig. 2 is a vertical section taken through the barrel and the sharpener secured therein, illustrating the pencil-point in engagement with the sharpener. Fig. 3 is a perspective view of the sharpener removed from the pencil-barrel, and Fig. 4 is a side elevation of a knife member of the sharpener.

In carrying out the invention a series of knives A are employed. Ordinarily these knives are four in number, but their number may be increased or decreased, as found desirable. Each knife is substantially triangular in cross-section, and preferably the outer face *a* of each knife is arched or curved transversely, being somewhat cylindrical, and longitudinally the outer face of each knife is concaved regularly, whereby the said outer face *a* extends outwardly in opposite directions from an approximately central point, as shown in Fig. 4. The apex or sharp inner edge *a'* of each knife constitutes a cutting-surface, and the knives, owing to their peculiar construction in cross-section, may be brought close together at one end, forming substantially a solid body, as shown particularly in Fig. 3, and at this point the knives will be bound together by preferably an elastic sleeve B, the said sleeve being made from rubber or an equivalent material. Preferably also the knives are made narrower at their ends than at their centers, having a gradual slant from the center in direction of their extremities; but this feature may be omitted if in practice it is found desirable.

In operation the complete fastener, as shown in Fig. 3, is introduced into the tube C or the barrel in which the pencil is to be placed, and if so desired the said barrel may be provided with an attached eraser C'; but the barrel and the eraser constitute no portion of this invention.

When the sharpener is introduced into the barrel, the end carrying the sleeve B is first introduced and the sharpener is then forced upward and outward in the barrel until it reaches a predetermined point, whereupon the free ends of the blades will be in a measure contracted within the barrel and the sleeve-bound ends somewhat expanded or carried outward, as shown in Fig. 2. In fact, the blades of the sharpener, when placed in the barrel, will practically equalize themselves.

The pencil D, adapted to have its lead or its point sharpened, is introduced into the barrel in such manner as to bring the point or lead in between the assembled blades, and by turning the pencil the inner sharpened surfaces *a'* of the blades will give the point and the lead the proper taper in an expeditious and convenient manner.

This sharpener is particularly adapted for use in connection with pencils having a paper wrapper, since when the wrapping of such pencils is removed to provide a greater length of exposed lead the lead is comparatively blunt or dull, and by introducing the lead of such pencils into such a sharpener said lead may be properly pointed. The yielding sleeve B is ordinarily made of such length that it will extend from one end of the group of

knives to a point at or near the longitudinal centers of the same.

If in practice it is found desirable, the cutters may be pointed at their extremities, the convex cutting edge continuing from end to end.

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

1. A pencil-sharpener, the same comprising a series of blades assembled together, each of said blades being deflected inwardly between its ends, and an elastic sleeve uniting the blades at one of their ends, as and for the purpose specified.

2. A pencil-sharpener, the same consisting of a series of knives grouped together, the knives being substantially triangular in cross-section, their inner or reduced edges being cutting edges, and a binding of elastic material located at one end of the said knives, maintaining them in their assembled position, substantially as shown and described.

3. A pencil-sharpener, the same consisting of a series of knives having concaved outer and convexed inner surfaces, the knives being substantially triangular in cross-section, their inner convexed edges being cutting edges, and a yielding sleeve binding the group of knives at one of their ends, substantially as described.

4. A pencil-sharpener, the same consisting of a group of knives substantially triangular in cross-section, their inner reduced edge being a cutting edge, the said knives having in longitudinal formation a concaved outer and a convexed inner edge, the outer concaved surfaces being formed transversely on the segment of a circle, each knife having a taper from a point near its center in direction of its ends, the taper being such that the ends are less in cross-section than the central portion of the knives, and a yielding sleeve located at one end of the knives, serving to bind them together, said sleeve extending to practically a central point in the length of the knives, as and for the purpose specified.

HENRY M. DIXON.

Witnesses:
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