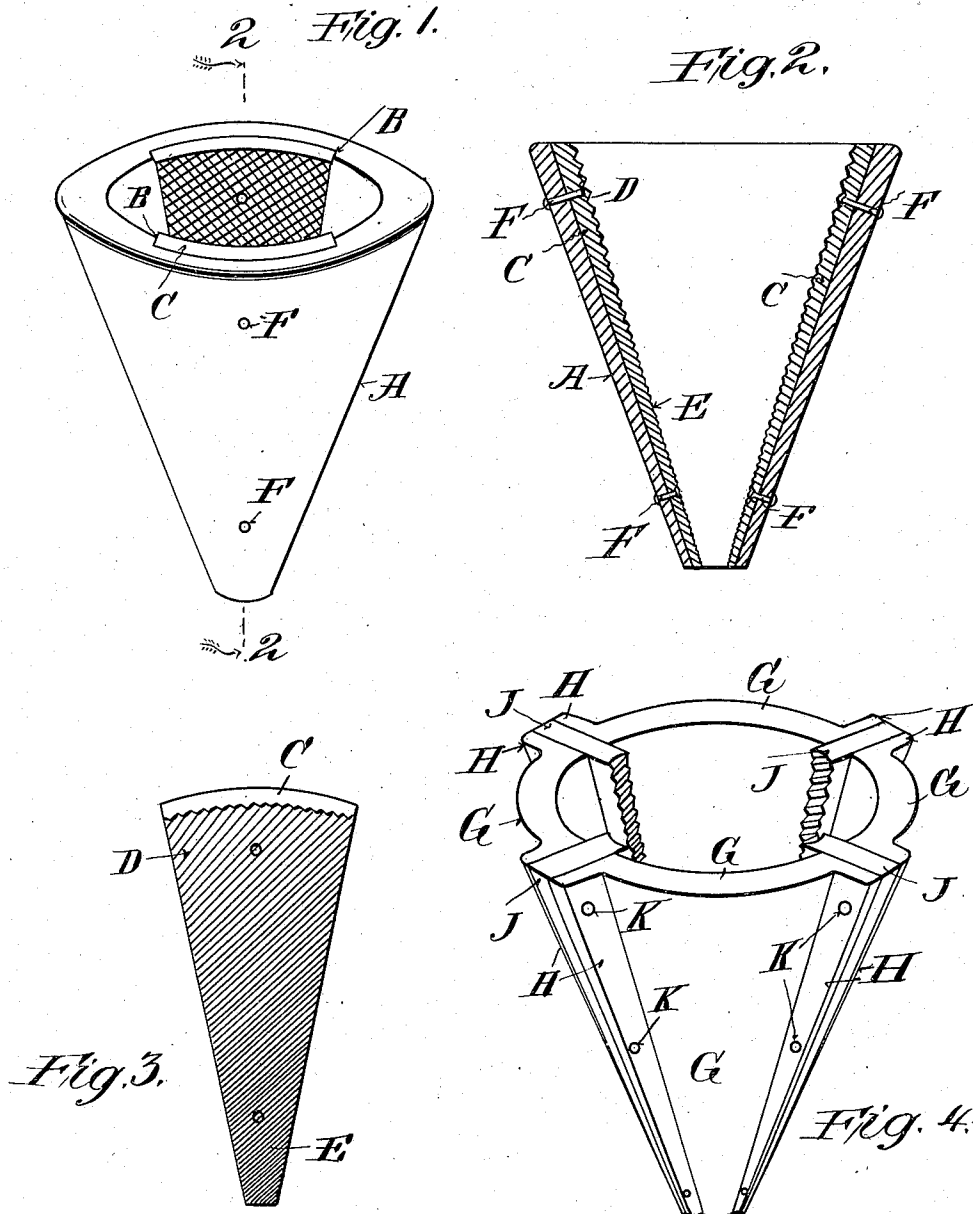


R. F. GEORGE.
PENCIL SHARPENER.
APPLICATION FILED JUNE 19, 1908.

941,631.

Patented Nov. 30, 1909.



Witnesses:
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UNITED STATES PATENT OFFICE.

RICHARD F. GEORGE, OF BROOKLYN, NEW YORK.

PENCIL-SHARPENER.

941,631.

Specification of Letters Patent.

Patented Nov. 30, 1909.

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To all whom it may concern:

Be it known that I, RICHARD F. GEORGE, a citizen of the United States, residing at Brooklyn, in the county of Kings, State of New York, have made a certain new and useful Invention in Pencil-Sharpener, of which the following is a specification.

This invention relates to pencil sharpeners.

The object of the invention is to provide a sharpener for lead, slate or other pencils, which is simple in construction, economical to manufacture, and efficient in operation.

A further object is to provide a pencil sharpener wherein the possibility of breaking off the point of the pencil during the sharpening operation is reduced to a minimum.

Other objects of the invention will appear more fully hereinafter.

The invention consists substantially in the construction, combination, location and relative arrangement of parts, all as will be more fully hereinafter set forth, as shown in the accompanying drawing, and finally pointed out in the appended claims.

Referring to the accompanying drawing, and to the various views and reference signs appearing thereon,—Figure 1, is a view in perspective of a pencil sharpener embodying the principles of my invention. Fig. 2 is a central longitudinal section of the same, on the line 2, 2, Fig. 1. Fig. 3, is a detached detail view of a form of sharpening tool employed in connection with and forming part of my invention. Fig. 4 is a view similar to Fig. 1, showing a modified form of sharpener embraced within the scope of my invention.

The structure of pencil sharpener is very simple and includes a holder which is preferably of conical shape, and which carries on the interior thereof the sharpening tools. In the form shown in Fig. 1 the holder A, is provided with seats or grooves B, on the interior walls thereof in which the sharpening tools C, are received. In this form of the device the tools are wedge shaped in the longitudinal length thereof, and are concaved in, the inner surface thereof in their transverse width, the arc of curvature being such that, preferably, a transverse section of the holder A, at any point will cut the inner surface of such tools in the arc of a circle the center of which lies in the longitudinal central line of the holder. These cutting tools

are roughened or ribbed, after the fashion of file surfaces to produce cutting edges. In practice I prefer to form the cutting surface of the tools C, with coarse grained cutting edges at the point of greatest transverse width thereof, as indicated at D, and to gradually reduce the grain thereof toward the smaller end E, thereof, at which point I prefer that the cutting edges be of very fine grain. In this manner I reduce to a minimum the danger of breaking off the point of the pencil during the sharpening operation, while at the same time the sharpening operation is quickly accomplished, the coarse grained portions of the cutting tools performing their work quickly while the fine grained portions of such tools effect the reduction of the point of the pencil to the desired size.

The tools may be held and retained in the holder in any suitable or convenient manner. I have shown them held in place in the seats or grooves B, on the inner wall of the holder. If desired rivets or pins F, may also be employed for this purpose.

In practice I prefer to so arrange the cutting tools within the holder that the cutting surfaces thereof extend or project inwardly beyond the inner surface of the holder. This arrangement provides a desirable clearance for the cuttings made during the sharpening operation and prevents the cutting surfaces of the tools from becoming clogged with the cuttings.

The holders A, may be made very rapidly and cheaply of any desired material, such as soft metal, while the cutting tools may be economically and rapidly made of steel or other suitable material, by drop forging or otherwise, and hence avoiding machine work. The parts may be quickly and rapidly assembled, thereby enabling the sharpeners to be produced at very small cost, while they are strong and durable.

Any desired number of cutting tools may be employed. In the particular form shown in Fig. 1, to which, however, my invention is not to be limited or restricted, only two of such tools are employed.

In Fig. 4, I have shown a modified form of sharpener embraced within the spirit and scope of my invention wherein the holder is formed of wedge-shaped sections G, having flanges H, on their edges to receive and clamp therebetween the cutting tools J. In this form of the device the cutting tools are

provided with concaved cutting edges or surfaces, the cutting being effected by cutting blades or teeth or file edges, as may be desired, and as shown, the concave curvature of such surfaces being in arcs of circles having their centers lying in the longitudinal central line of the holder. In this form of the device I propose to retain the features of coarse cutting edges or surfaces of the tools at the points of greatest transverse width of the tools, and of decreasing coarseness toward the smaller ends thereof, and also the longitudinal wedge shape. In this form, also the cutting surfaces of the tools extend or project inwardly from the inner wall of the holder, as clearly shown. The various sections G, of the holder may be held or secured together in any suitable or convenient manner, as for instance the pins or bolts K.

Having now set forth the object and nature of my invention and various structures embodying the principles thereof, what I claim as new and useful and of my own invention and desire to secure by Letters Patent is:—

1. In a pencil sharpener a conical holder having cutting tools, said tools having a coarse grained cutting surface at one end, said coarse grained cutting surface merging gradually into a fine grained cutting surface at the other end.

2. In a pencil sharpener, a conical holder open at both ends, in combination with cutting tools arranged on the interior thereof, said tools having concaved cutting surfaces.

3. In a pencil sharpener, a conical holder

open at both ends, in combination with cutting tools arranged on the interior thereof, said tools being longitudinally wedge-shaped and transversely concaved on their cutting surfaces.

4. In a pencil sharpener, a conical holder, in combination with cutting tools arranged on the interior thereof, said tools being longitudinally wedge-shaped and having coarse grained cutting surfaces at their larger ends and merging gradually into fine grained cutting surfaces at their smaller ends.

5. In a pencil sharpener, a conical holder, in combination with cutting tools arranged on the interior thereof and having concaved cutting surfaces, said cutting surfaces projecting or extending inwardly from the inner surface of the holder and including a coarse grained portion merging gradually into a fine grained portion toward the smaller end of the conical holder.

6. A pencil sharpener having cutting tools, said tools having a coarse grained cutting surface at one end, said coarse grained cutting surface merging gradually into a fine grained cutting surface at the other end, and means for securing said tools in assembled relation.

In testimony whereof I have hereunto set my hand in the presence of the subscribing witnesses, on this 18th day of June A. D., 1908.

RICHARD F. GEORGE.

Witnesses:

J. KLEIN,
S. E. DARBY.