

J.W. Strange & S. Darling.

Pencil Sharpener

N^o 18,265. Patented Sept. 22, 1857.

Fig. B.

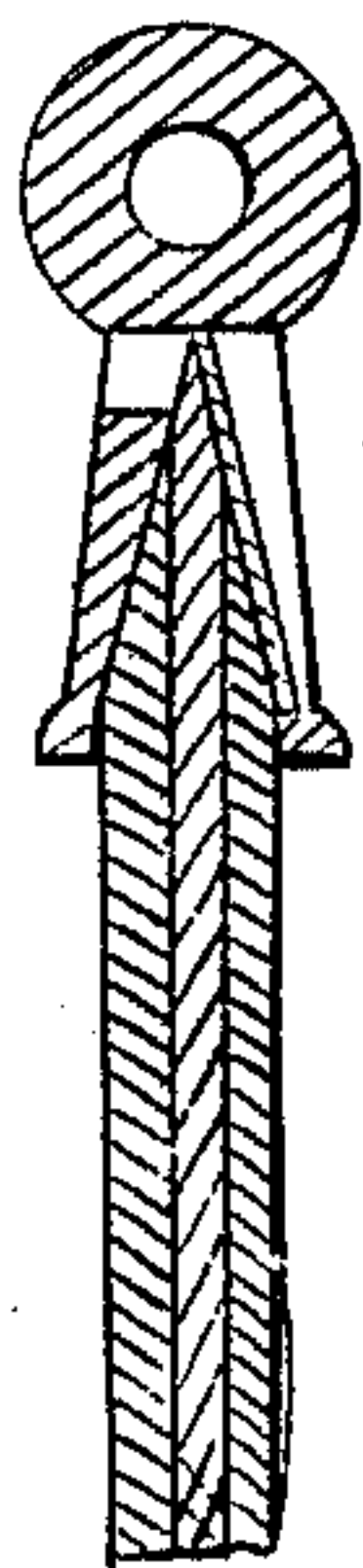


Fig. 5.



Fig. 2.

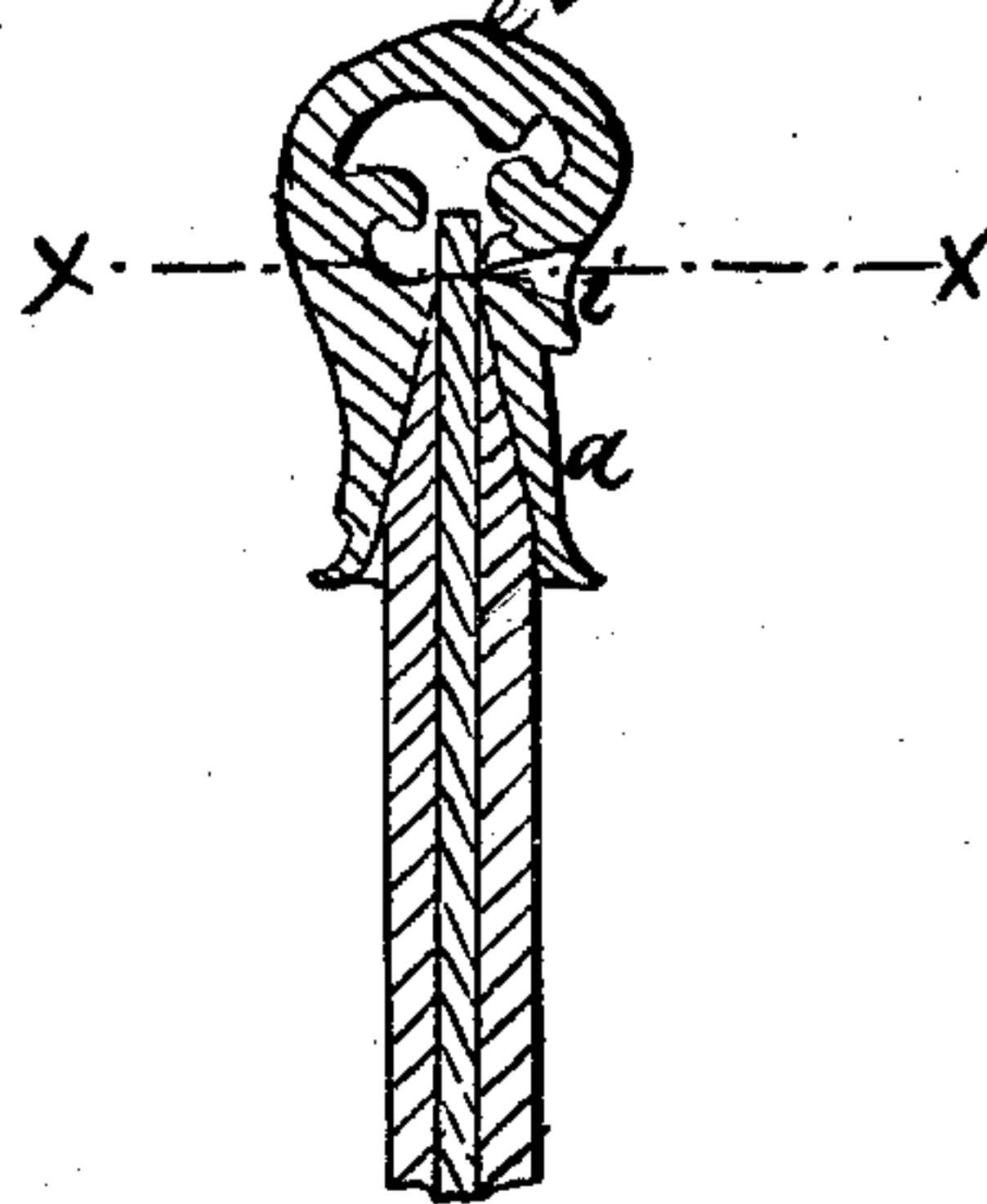


Fig. 1.



Fig. 4.



Fig. 3.

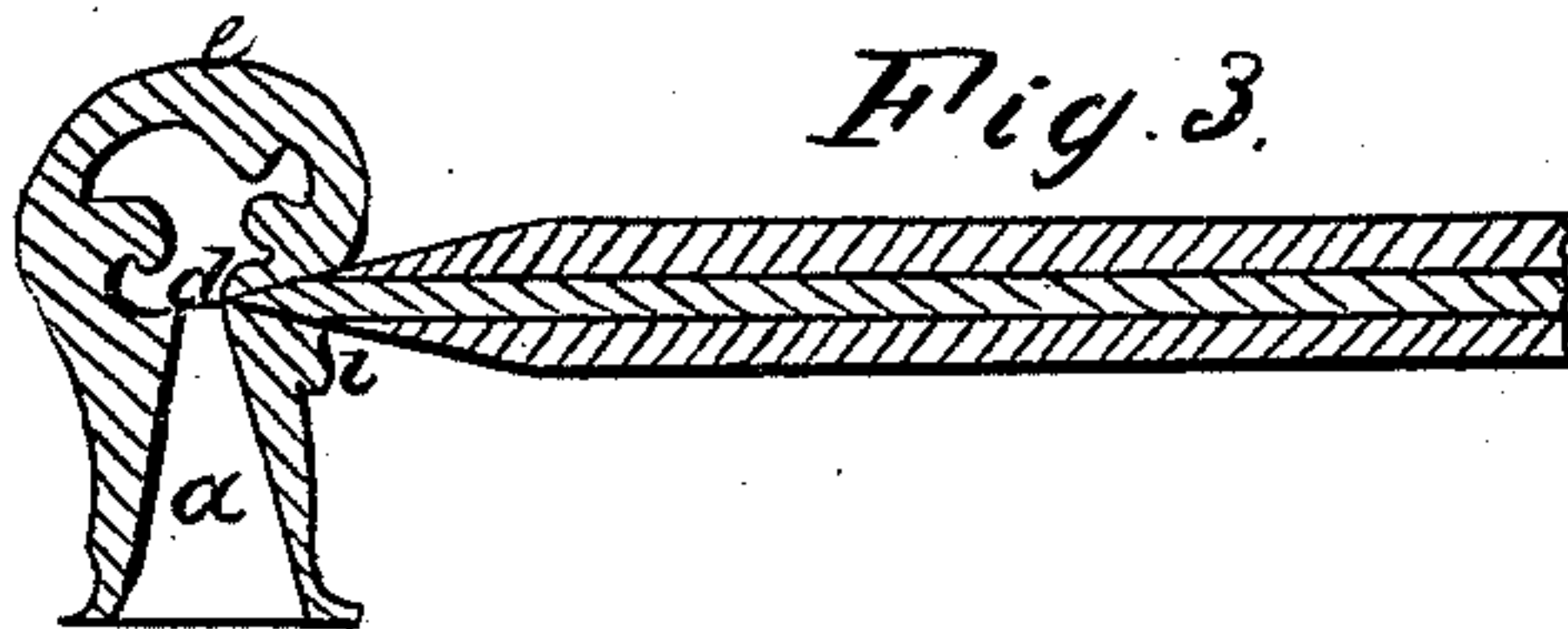


Fig. C.



Fig. A.

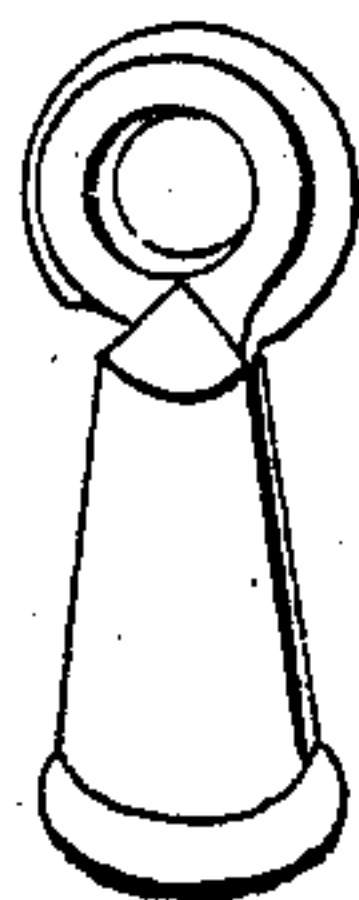


Fig. 6.



Fig. 7.

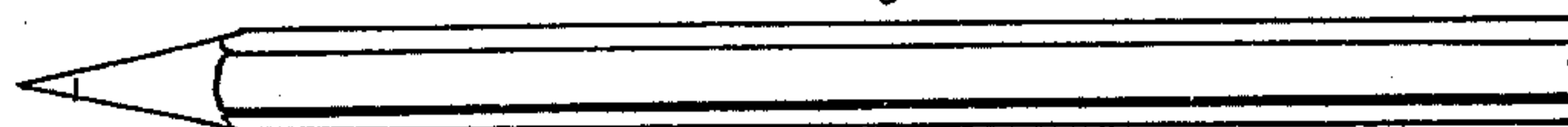
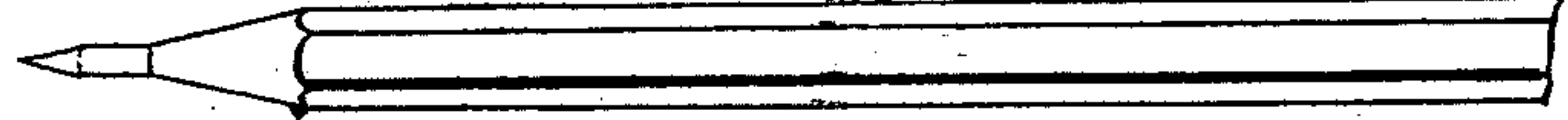


Fig. 8.



UNITED STATES PATENT OFFICE.

JOS. W. STRANGE AND SAML. DARLING, OF BANGOR, MAINE.

PENCIL-SHARPENER.

Specification of Letters Patent No. 18,265, dated September 22, 1857.

To all whom it may concern:

Be it known that we, J. W. STRANGE and SAMUEL DARLING, both of Bangor, in the county of Penobscot and State of Maine, have invented a new and useful Improvement in Instruments for Sharpening Pencils, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure A represents a view in perspective of the pencil-sharpener now in common use. Fig. B represents a longitudinal section of the same with a pencil inserted in it in process of being sharpened, and Fig. C represents the pencil when sharpened.

In its general form this pencil sharpener resembles an ordinary candle-extinguisher, being a hollow cone with a ring attached to its apex, to handle it by. This hollow cone is formed into a conical cutter by making in its side a longitudinal slot and by fixing in this slot a thin blade or knife, with its edge toward the interior of the cone and projecting slightly within the inner surface of the cone.

The slot and knife extend from within a short distance of the base to the apex of the cone which terminates in a cavity made transversely through the cone at its apex.

To sharpen a lead pencil by means of this instrument, it is held by the ring between the finger and thumb of one hand while the point of the pencil, held in the other hand, is inserted into the cone and rotated, under slight pressure, against the knife, causing it to remove a shaving from the circumference of that part of the pencil which is to be reduced to a conical form, the shaving being parallel to the surface of the cone to be formed and continuing to be pared off, like the unwinding of a spiral, until the point of the pencil is reduced to a solid cone, the counterport of the hollow cone of the instrument. During this operation the wood and lead are simultaneously reduced, by a shaving of equal thickness taken from both. As the lead is brittle, the shaving taken from it is pulverized by the act of cutting and this pulverized lead falling upon that part of the knife which is cutting the wood, rapidly dulls its edge which, but for this interposition of gritty matter would long retain its sharpness. As a smooth point cannot be formed on the pencil without a sharp knife, this dulling of the knife by

the mixture of the grit from the lead with the shaving from the wood, greatly impairs the efficiency of the instrument. Further, as the wood and the lead are cut simultaneously a shaving of equal thickness is removed from both and the slot which forms the slope of the cutter must be sufficiently wide to let the shavings escape freely, leaving the point of the lead with too little support to enable a material so brittle to sustain the pressure of the cutter; hence, the point of the lead is almost invariably broken off and left in the form of a jagged and irregular frustum, in the act of sharpening the pencil. This broken point is highly objectionable not only on account of its irregularity, but also of its bluntness.

There are other pencil sharpeners known which being in very limited use and much more imperfect than this, it is unnecessary to describe their defects.

To remedy the above specified and other defects in the pencil sharpeners heretofore known is the principal object of our invention which consists in so constructing the instrument that it will, in sharpening a pencil, reduce the wood separately from the lead, thus avoiding the dulling of the knife which results in the previous instruments, from reducing the wood and the lead simultaneously, and thereby bringing the grit from the lead in contact with the edge of the knife, and we accomplish this object by combining with the conical hollow cutter for reducing the wood of the point of the pencil, a smaller hollow conical cutter for reducing the lead of the point of the pencil after the wood has been reduced by the larger cutter, the cone for reducing the lead being provided with a knife having a narrower throat and cutting a thinner shaving than would be appropriate for reducing the wood, thus leaving the cone nearly entire so as almost to encircle and thereby effectually support the lead, while under the action of the cutter, so that it can easily be reduced to a point sufficiently sharp without danger of breaking it off. By thus saving the point of the lead and utilizing it, a pencil will do from five to twenty per cent more work when sharpened in this way than it would when sharpened by the previous instruments which break off the point of the lead.

Our improved sharpener is shown in perspective in Fig. 1 of the accompanying

drawing and in section in Fig. 2, the pencil being shown in the latter figure in process of having its wood reduced. Fig. 3 is a similar section representing the pencil with its point inserted in the smaller cutter, in process of having the lead reduced. Fig. 4 is a similar section in a reversed position, to show the cutters. Fig. 5, is a horizontal section, at the line $x\ x$, of Fig. 2. Fig. 6 represents the pencil partially pointed with its wood, only, reduced, preparatory to having its lead reduced. Fig. 7 represents a pencil with the sharpening completed, and the point left in a form suitable, for writing, and Fig. 8, represents a pencil with the sharpening completed with the point in the form of a double cone and suitable for the use of draftsmen, the lead being allowed to protrude from the wood farther than in that shown in Fig. 7, the last mentioned form of point being produced by cutting away the wood in the larger conical cutter farther back from the end of the lead than would be required to form a point in which the wood and lead form a common cone, and then reducing the end of the lead to a point in the smaller conical cutter, leaving between this cone on the end of the lead and the wood, a cylindrical column of lead, of greater or less length as may be required.

In its general shape our improved pencil sharpener, like those in common use, resembles a candle extinguisher and it may be made either plain or with an ornamental exterior as shown in the drawing, according to the taste of the manufacturer.

In Figs. 1 and 2 (a) is the hollow frustum of a cone armed with a knife (b) (attached to the slot (c) in its side), for re-

ducing the wood; this hollow frustum terminates in the space (d) within the ring (e), into which space the lead protrudes while the wood is being reduced. A second and smaller hollow cone (i), whose axis is at right angles to that of the cone (a) is formed in the ring (e) at its junction with the cone (a) and this smaller cone has a narrow slot in its side, armed with a knife for reducing the lead to a point as already described. The knife (b) with which the slot in the larger cone is armed, is made in this example to extend with one of its ends to the smaller cone and this end is sharpened to form the cutter of the smaller cone. This knife should be made of well tempered steel of the best quality. The rest of the instrument may be made of brass or some softer metal and may be conveniently cast in a mold.

Having thus described our improvement in instruments for sharpening pencils, we do not claim the mere multiplication of cutters of various sizes, in the same stock or holder, but

What we claim as new and desire to secure by Letters Patent is—

The combination of two cutters, constructed and arranged to reduce the wood and the lead separately, substantially as herein set forth.

In testimony whereof, we have hereunto subscribed our names.

JOSEPH W. STRANGE.
SAMUEL DARLING.

In presence of—

JOHN L. HODSTON,
ISAAC L. WHITMAN.