(No Model.)

A. FORNANDER.

LEAD, CRAYON, OR OTHER HOLDER.

No. 499,191. Patented June 6, 1893.

Fig. 4.

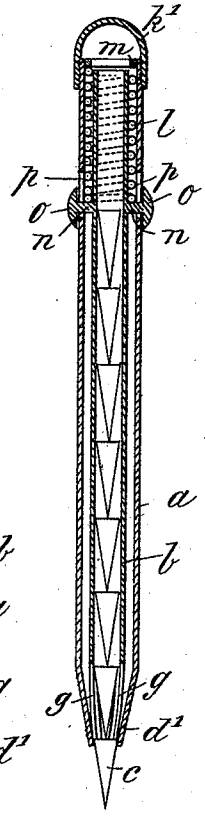


Fig. 3.

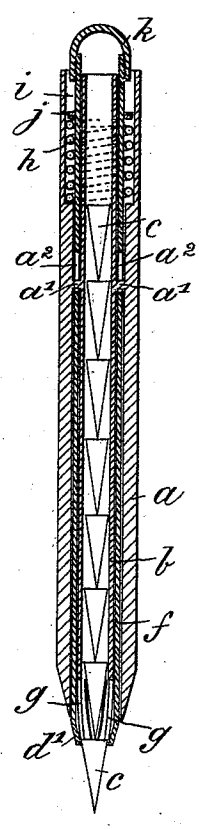


Fig. 1.

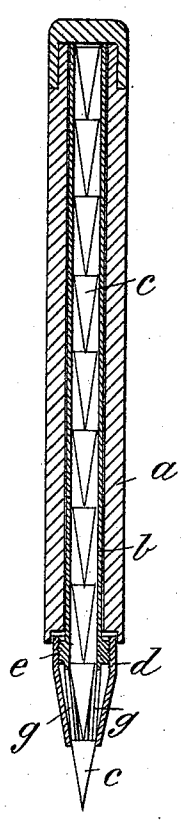


Fig. 5.

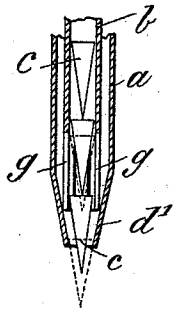
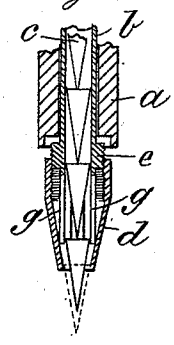


Fig. 2.



Witnesses:
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W. J. Morgan

Inventor:
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UNITED STATES PATENT OFFICE.

ALFRED FORNANDER, OF NEW YORK, N. Y.

LEAD, CRAYON, OR OTHER HOLDER.

SPECIFICATION forming part of Letters Patent No. 499,191, dated June 6, 1893.

Application filed July 28, 1892. Serial No. 441,434. (No model.)

To all whom it may concern:

Be it known that I, ALFRED FORNANDER, a subject of the King of Sweden and Norway, and a resident of New York city, in the county and State of New York, have invented certain new and useful Improvements in Lead, Crayon, or other Holders, of which the following is a specification.

My invention consists in improvements in lead, crayon or other holders in which a series of sharp points is contained in a magazine, with means for ejecting the worn points and substituting new ones, the said improvements being designed to simplify the construction and improve the efficiency of the same, all as hereinafter fully described reference being made to the accompanying drawings in which—

Figure 1, is a sectional elevation of my improved pencil as I prefer to make it, with the point in position for use. Fig. 2, is a like section of the lower part of the pencil with the parts in the positions showing the manner of substituting a new point. Figs. 3 and 4 are sectional elevations of like pencils in which some of the parts are modified to some extent but are adapted to operate on the same general principle. Fig. 5, is a like section of the lower part of the form represented in Fig. 4, with the parts in the position for substituting a new point.

The essential principle of the invention consists of a series of short taper points of lead or other marking substance contained in a magazine having a split contracting nozzle at the lower end, and contained in a case or handle tube at the lower end of which is a taper nozzle adapted to receive the points through the split nozzle, and hold them by the head with the most of the length projecting for use, said points being larger in the head than the bore of the said taper nozzle and being pressed downward and confined therein by pressure of the end of the split nozzle against the upper ends of the heads, the said split nozzle being pressed down and contracted in the taper nozzle over the heads and caused to press downward thereon and hold the points firmly in the position for use.

I represent three different arrangements of apparatus in the drawings all operating upon this principle though differing somewhat in details of construction, but alike included in the claims.

In all the figures *a*, represents the case or handle tube which may be of wood or other suitable material and of considerable thickness as in Figs. 1, 2 and 3, or of thin sheet metal like the form represented in Figs. 4 and 5.

b represents the magazine tube which will preferably be of thin sheet metal.

The magazine is charged with a series of short taper lead, crayon or other points *c*, which lie one above another with the points downward.

At the lower end of the pencil is a taper nozzle *d*, for holding the points, said nozzle being detachably connected as by screwing on the shoulder *e* of the magazine tube, or it may be on to the lower end of the case or handle tube, or it may be formed on the end of the handle tube as *d'* Fig. 4, or of an intermediate tube *f*, Fig. 3. The opening through the lower extremity of this nozzle is slightly smaller in diameter than the heads of the points so that the points may be held for use by pressure against the upper ends. To effect this pressure the lower portion *g* of the magazine tube has a number of longitudinal slits extending a suitable distance upward to allow it to be contracted at the lower extremity within the area of the head of the point below and it is made to bear thereon. In Figs. 1 and 2 the nozzle *d* being first slacked off to allow the slitted part *g* to expand and permit the point to drop through into the lower end of the said nozzle, and then being screwed up again, so contracts the said part *g*, over the point, and it also carries the point against the contracted end and effects the required pressure.

In Fig. 3 the spring *h* in the recess *i*, in the upper part of the handle tube acting on the shoulder *j*, of the intermediate tube presses the nozzle *a'* upward to contract the expansive part *g* of the magazine tube and secure the point in like manner. The tube *f* is in this case forced down by pressure of the finger on the push piece *k* to permit the part *g* to expand and allow the point to drop through. The handle tube *a*, and magazine tube *b* are connected by studs *a'*, through slots a^2 of the intermediate tube.

In Fig. 4 the like spring *l*, in the space between tubes *a* and *b* at the upper end and confined between shoulder *m* of tube *a*, and the studs *n*, connecting ring *o* and tube *b*, through slots *p* of tube *a* presses the expansible part *g* of the magazine tube down into the taper nozzle *d'* to secure the point.

To raise the magazine tube and allow the point to drop through part *g* into the nozzle the ring *o* is held between the fingers while the push piece *k* is pressed downwardly by another finger. The worn points are discharged out of the nozzle *d* by screwing it off, and thrusting the points backward out of the larger end. The points may however be wrenched out through the small end by taking the protruding portion between the edge of a knife blade or other like instrument and the thumb and giving a sufficient lateral thrust to break off the edge of the head, and this is the way the points will be discharged from the modified form of Figs. 3 and 4. The nozzles *d*, *d'*, may however be split so as to open slightly by the wrenching action on the points to facilitate the discharge.

The points may be charged into the magazine tube through the upper end or in any approved way.

The invention is thus distinguished from those in which the leads of usual length for continuous use slide freely through the nozzle of the holder, and jaws are made to grip the sides of the lead by being pressed into the nozzle for holding them which, it will be seen would not serve for short points such as are to be thrown away when worn blunt.

The invention is distinguished from that of my Patent No. 480,188 in that the device for pressing the points down in the holding nozzle is a split nozzle formed on and being part of the inclosed magazine tube, and the holding nozzle is exterior thereto which is a simpler and neater device.

I claim—

1. In a pencil a number of individual taper marking points, a magazine containing said points and having a split contracting and expanding lower end portion, an internally taper bored point holding nozzle exterior to the split portion of the magazine tube, the bore of said taper nozzle being continuous through its length and at the outer extremity smaller than the heads of the points, and means to press the split end of the magazine tube on the heads of the points and hold them in the taper nozzle substantially as described.

2. In a pencil a number of individual taper marking points, a magazine containing said points, and having a split contracting and expanding lower end portion, an internally taper bored point-holding nozzle exterior to the split portion of the magazine tube, the bore of said taper nozzle being continuous through its length and at the outer extremity smaller than the heads of the points, and said taper nozzle being adjustable lengthwise of the split portion of the magazine tube to secure the points, and also detachable for discharging the worn points substantially as described.

Signed at New York city, in the county and State of New York, this 23d day of July, A. D. 1892.

ALFRED FORNANDER.

Witnesses:
ERNST CUNDGREN,
W. J. MORGAN.