

UNITED STATES PATENT OFFICE.

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PENCIL.

No. 863,258.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CLAES WM. BOMAN, residing in the city of New York, county and State of New York, have invented a new and useful Improvement in Pencils, of which the following is a specification.

My invention is directed to what are known as mechanical pencils—that is to say, pencils comprising, generally speaking, a case for containing the lead or crayon and means for holding, or both for holding and adjusting, the lead in desired position in the case.

The pencil in which my invention is embodied is one in which the well known "pro- and re-pelling movement" so called is employed for the purpose of advancing and retracting the lead. While this "movement" is excellent for purpose of adjusting the lead, it is defective in that it does not hold the lead in adjusted position with the requisite certainty and firmness. To overcome this disadvantage—which so far as I am informed manifests itself in all of the ordinary pro- and re-pelling pencils—is the object of my invention. To this end I provide the case which contains the pro- and re-pelling movement with a tip, consisting of a split tube through which the lead protrudes, and a tapering clamping nozzle which screws upon the case or handle and serves, according to the direction in which it is screwed, to cause the split tube to clamp, or permit it to release, the lead. Such a split tube and clamping nozzle constitute the "artist-tip" to be found in the old and well known artist-tip pencil such as illustrated for example in Patent No. 33,034 of August 13, 1861. In a pencil of this type, while the lead is gripped firmly and safely, yet as the lead when released from the grip of the nozzle is entirely loose the operation of adjusting it is uncertain and attended with some trouble. These objections do not obtain in my pencil. In fact it combines the advantageous structural characteristics of both the pro- and re-pelling pencil and the artist tip pencil, without the disadvantageous characteristics of either one of them. This I believe to be new with me beyond its preferred structural embodiment hereinafter described. I am not aware of any prior pencil in which a pro- and re-pelling movement, for purpose of adjusting the lead, is combined with an "artist-tip" so-called, for purpose of gripping and holding the lead in adjusted position.

In the accompanying drawing to which I shall now refer for a more complete understanding of my invention—Figure 1 is a longitudinal axial section of a pencil embodying my invention in its preferred form. Fig. 2 is an elevation of the same with the outer case or sheath removed to show the spirally threaded propelling tube, and with the clamping nozzle detached, to show the split tube within. Fig. 3 is an elevation

of the longitudinally slotted guide tube and parts connected therewith.

A is the lead carrier, contained in the longitudinally slotted guide tube B in which it can freely slide. Surrounding the slotted guide tube B, is the spirally threaded propelling tube C—the two tubes being capable of rotary motion only relatively to one another. Upon the carrier A are studs *a* which project from opposite sides thereof through the straight slots *b* of the guide tube B and are notched to engage the spiral thread *c* of the propelling tube C. Axial rotary movement of the one tube relatively to the other will have the effect of advancing or retracting the carrier, and the lead *x* which it carries, according to the direction of rotation. This is the ordinary pro- and re-pelling movement hereinbefore referred to, and is not of my invention.

To the front end of the guide tube B is secured the sleeve E in which the front ends of the tube C and of the external case or sheath D are housed. This case is secured to and movable with propeller tube C, and the latter can be held from longitudinal movement on the guide tube B in any suitable way—as for example between top and bottom annular shoulders *y* on the guide tube B and in the sleeve E respectively.

The sleeve E is brazed or otherwise suitably fastened at *e* to an externally screw-threaded tubular nozzle bearing *f* through which passes the lead-containing tube B—the projecting end of this tube being longitudinally split to form jaws *g* which may be closed upon the lead. Surrounding the jaws *g* and screwing upon the screw threaded tubular bearing *f* is the clamping nozzle F which has a tapering interior of such dimensions that when screwed down upon its bearing *f* it will close the jaws *g* upon the lead tightly and firmly. The jaws *g* and clamping nozzle F in this function constitute the "artist tip" hereinbefore referred to.

The operation of the parts is as follows—supposing the lead to be withdrawn into the case, and the nozzle F screwed down. Taking hold of the sleeve E in one hand, the operator with the other hand turns the sheath D, and consequently the spirally threaded propelling tube C, with the effect of advancing the lead carrier and lead. The lead, as it advances, passes through and protrudes beyond the jaws *g*. When it protrudes far enough the movement is stopped, and then the clamping nozzle is screwed down tight, causing the jaws *g* to grip and clamp the lead evenly and firmly. The parts are shown in this position in Fig. 1. In Fig. 2 the clamping nozzle is shown detached from the pencil in order to illustrate the jaws *g* in unclamped condition.

Having described my invention and the best way

now known to me of carrying the same into practical effect, I state in conclusion that I do not restrict myself to the structural details hereinbefore set forth in illustration of my invention, since manifestly the same can be varied to some extent without departure from the principle of the invention, but

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

10 In a pro- and re- pelling pencil, the combination with the lead carrier, the straight slotted guide tube containing said carrier, and the spirally threaded propelling tube capable of rotation only on the guide tube—these parts consti-

tuting the pro- and re- pelling movement—of a split tube forming a continuation of the guide tube, and a screw threaded clamping nozzle mounted upon the front end of the pencil in position to surround and close the split tube upon the lead, substantially as and for the purposes hereinbefore set forth. 15

In testimony whereof I affix my signature in presence of two witnesses.

CLAES WM. BOMAN.

Witnesses:

SAMUEL KRAUS,
EDWIN M. BEROLZHERMER.