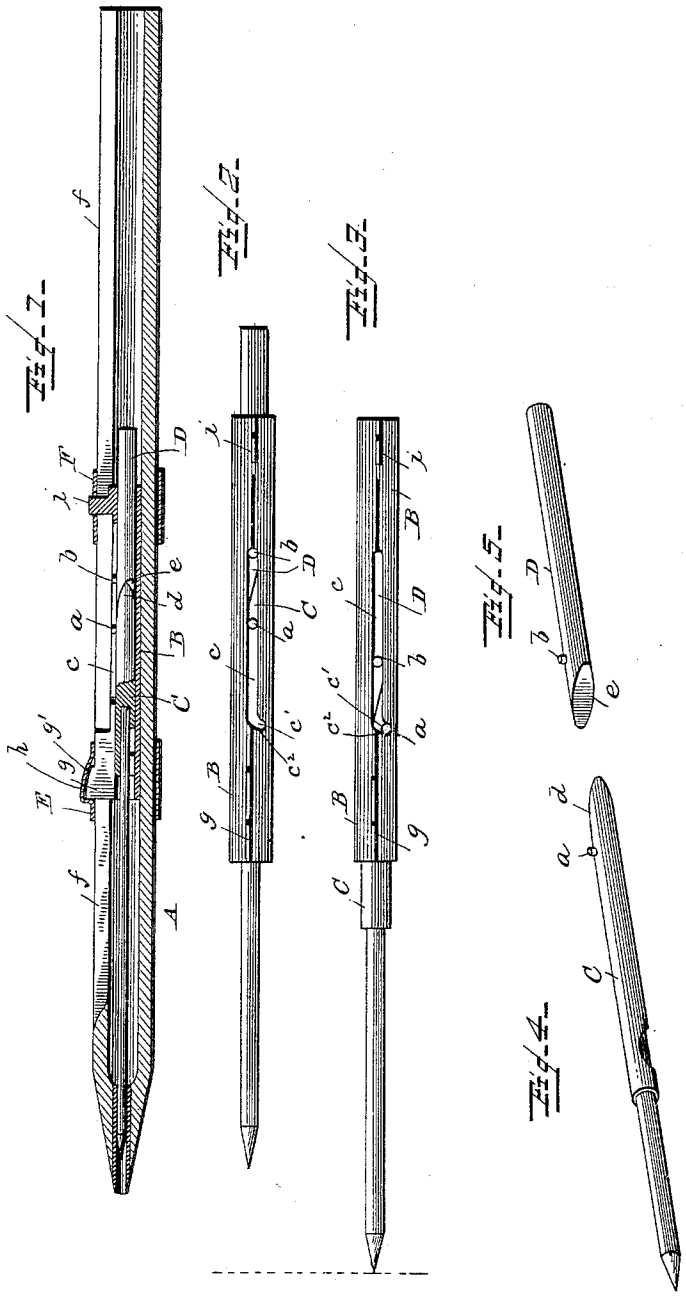
(No Model.)

C. W. BOMAN.

LEAD OR CRAYON HOLDER.

No. 394,053. Patented Dec. 4, 1888.



WITNESSES,

Edwin L. Yewell.

Wm. A. Pierce.

INVENTOR,

Claes W. Boman.

by Marcellus Bailey

his Attorney.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

CLAES WM. BOMAN, OF NEW YORK, N. Y., ASSIGNOR TO THE EAGLE PENCIL COMPANY, OF SAME PLACE.

LEAD OR CRAYON HOLDER.

SPECIFICATION forming part of Letters Patent No. 394,053, dated December 4, 1888.

Application filed May 29, 1888. Serial No. 275 418. (No model.)

To all whom it may concern:

Be it known that I, CLAES WM. BOMAN, of the city, county, and State of New York, have invented a new and useful Improvement in Lead and Crayon Holders for Pencil-Leads, Crayons, and other Articles, of which the following is a specification.

This holder is one in which the lead or lead-carrier is loose within the sheath or handle and free to move by gravity within limits which will permit the lead to be protruded from or withdrawn within the sheath. When the sheath or handle is held point downward, the lead will thereby be automatically projected the required distance for writing purposes, and will be locked in that position so long as the point of the pencil is lower than the other end; and when, on the other hand, the sheath is held point upward, the lead thereby will be automatically released and allowed to drop within the handle. A holder possessing these characteristics is not new with me, broadly considered.

My invention resides in the instrumentalities employed by me to produce this kind of holder.

It also consists in combining with the sheath or handle the lead-carrier and the self locking and releasing mechanism in such manner that said carrier and mechanism can be adjusted bodily and together lengthwise of the sheath, thus compensating for the wear of the lead.

These features can best be explained and understood by reference to the accompanying drawings, in which—

Figure 1 is a longitudinal axial section of the holder with the parts in the position which they assume when the lead has dropped back within the sheath. Fig. 2 is a plan of the mechanical devices contained within the sheath, with the parts in the position represented in Fig. 1. Fig. 3 is a like view of the same parts in the position which they assume when the lead has dropped forward. Fig. 4 is a perspective view of the carrier. Fig. 5 is a like view of the follower.

A is the tubular sheath or handle.

B is a tubular sheet-metal stem secured, preferably, adjustably, as hereinafter explained, within the sheath. In this stem are the carrier C for the lead and the follower D, by which the carrier in its forward position is held in engagement with the stem B, so long as the pencil is point downward. The carrier and the follower are capable of sliding freely and independently of each other in the stem B, and each is guided in its movement by a pin or stud lettered, respectively, *a* and *b*, which project into a longitudinal slot, *c*, formed in the stem, of such length as to permit the free lengthwise movement of the follower and carrier within the limits requisite to secure the protrusion and the withdrawal of the lead. At the front of slot *c* is a lateral recess or notch, *c'*, leading off from the slot and having an inclined or sloping rear edge, c^2. The contiguous ends of the follower and carrier have cam, inclined, or slanting surfaces lettered, respectively, *d* and *e*, so shaped that each device, follower, and carrier when they meet will tend to impart a movement of rotation to the other. The pin or stud *a* on the carrier and the recess or notch *c'* are so related that when the carrier has moved forward as far as permitted by the slot *c* the stud *a* will be opposite to the notch *c'*.

Under these conditions the mode of operation is as follows: When the pencil is held point downward, both carrier and follower drop until the carrier brings up against the front end of slot *c*, at which time its stud *a* will be opposite the recess or notch *c'*. The impact of the follower upon the thus suddenly-stopped carrier will, owing to the faces *d* and *e*, give a movement of partial rotation to the carrier and cause its stud to enter and engage the notch. The follower at the same time, with its face *e* fitting closely against the face *d* of the carrier, will cause the stud *a* to be locked in the notch *c'* against pressure on the point of the lead, so long as the pencil is held point downward. So soon, however, as the pencil is turned to bring its point uppermost, the follower will drop back by gravity and the carrier will follow suit, its stud *a* traveling over the slanting rear edge, c^2, of the notch *c'* until it enters again the slot *c*. In this way the lead, actuated by gravity alone,

is protruded and locked or released and withdrawn, according as the point of the pencil is down or up.

In order to avoid cutting away the sheath or handle as the lead wears down, I prefer to make the sleeve adjustable, so that it can be moved toward the point of the pencil as the lead wears away. For this purpose I make use of the devices described in my application for Letters Patent, Serial No. 274,728, filed May 22, 1888—that is to say, the sheath is longitudinally slotted as at *f*. The stem is movable longitudinally in the sheath, and is provided with a guide-fin, *g*, which projects through the slot in the sheath, and is formed on the projecting part with an inclined cam or wedge face, *g'*, and mounted on the exterior of the sheath is a sliding clamping-sleeve, E, engaging the fin and provided with a bearing-face, *h*, to coact with the cam or incline on the fin. When the stem is adjusted in desired position, it can be there held by slightly moving forward the clamping-sleeve, so that its bearing-face *h* will jam and bind upon the cam *g'* of the fin. The stem can readily be retracted by means of this sleeve. To advance the stem I make use of a second sleeve, F, which engages a lug, *i*, on the stem, which lug also projects through the slot *f* of the sheath, all as set forth in my aforesaid application, Serial No. 274,728. In lieu of this arrangement I can dispense with sleeve E and fin *g*, and can simply make use of a sleeve engaging the stem in the same way that sleeve F engages it, and fitting the sheath so tightly that it will be held by friction in any position to which it may be moved. I prefer, however, to depend not upon friction, but rather upon the positive clamping action of the arrangement first above described.

Having described my invention, and the manner in which the same is or may be carried into effect, what I claim is—

1. The combination of the sheath or handle, the longitudinally-slotted stem provided at the front end of its slot with a lateral locking recess or notch having a rearwardly sloping edge or incline, the slope being toward the slot in the stem, and the independently-movable carrier and follower contained and freely movable independently of each other in the stem, within the limits of the slot in said stem, and provided at their abutting ends with inclined or cam-like faces, whereby the carrier, when it has moved forward, is caused to make a movement of partial rotation sufficient to carry its locking-stud into the lateral locking-recess of the stem, substantially as hereinbefore set forth.

2. The combination of the longitudinally-slotted sheath, the clamping-sleeve E and sleeve F, the longitudinally-movable stem engaging said sleeves by means of fins *g h*, and provided with slot *c* and lateral locking-recess *c'*, and the carrier and the follower freely movable in the sleeve independently of each other, within the limits of slot *c*, and formed at their abutting ends with cam-like or inclined faces, substantially as and for the purposes hereinbefore set forth.

3. The combination of the sheath, the slotted stem longitudinally adjustable in said sheath, and the carrier and locking-follower contained and freely movable independently of each other in the adjustable stem, within the limits of the longitudinal slot in said stem, all constructed and arranged substantially as and for the purposes hereinbefore set forth.

4. In an automatic lead and crayon holder, the combination, with the sheath or handle, of a lead-carrier and self locking and releasing mechanism therefor, contained within and adjustable bodily and together lengthwise of said sheath or handle, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my hand this 28th day of May, 1888.

CLAES WM. BOMAN.

Witnesses:
SAMUEL KRAUS,
C. S. BRAISTED.