(No Model.)

C. W. BOMAN.

LEAD AND CRAYON HOLDER.

No. 321,784. Patented July 7, 1885.

Fig. 1.

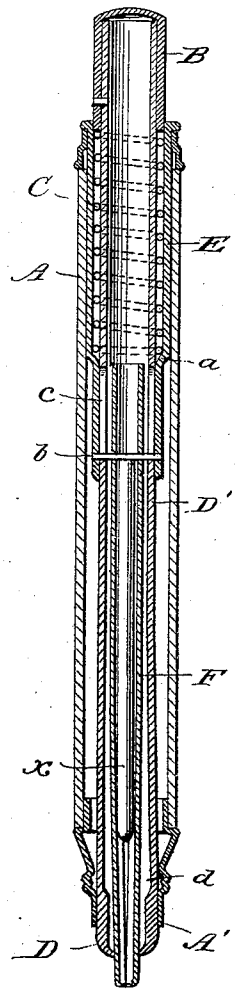


Fig. 2.

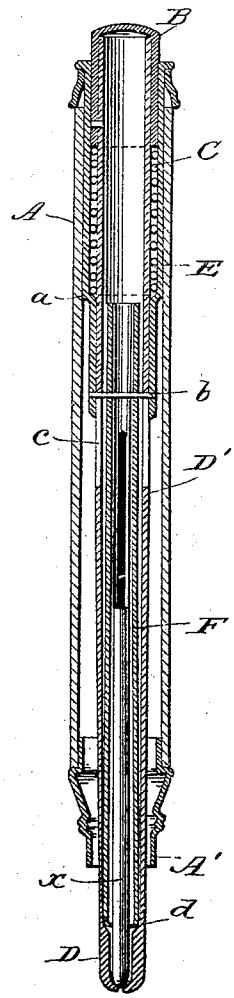
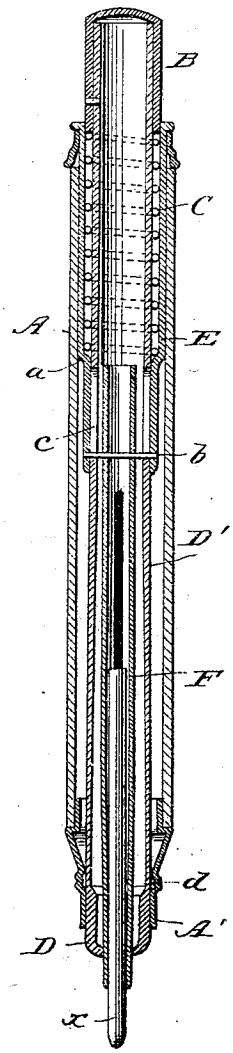


Fig. 3.



Witnesses:

A. N. Low

E. A. Dick

Inventor:

Chas. W. Boman

by Marcellus Bailey

attorney

BELL BROS., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

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

LEAD AND CRAYON HOLDER.

SPECIFICATION forming part of Letters Patent No. 321,784, dated July 7, 1885.

Application filed March 17, 1885. (No model.)

To all whom it may concern:

Be it known that I, CLAES W. BOMAN, of the city, county, and State of New York, have invented certain new and useful Improvements in Lead and Crayon Holders, of which the following is a specification.

My invention has reference to that kind of pencil or lead and crayon holder which has a lead-containing sheath, combined with a lead grasping or clamping device and means by which said device may be caused or permitted to release its hold on the lead; and it relates more particularly to a holder of this character which is provided with means—termed, for convenience' sake, a "stop-gage"—for limiting the extent to which the lead when released can drop or protrude from the pencil. This stop-gage feature is broadly claimed in Letters Patent No. 267,309, of November 7, 1882, and various applications of the principle are set forth in other patents, among which, as bearing to some extent upon my present invention, may be named Letters Patent No. 267,528, of November 14, 1882, and No. 265,730, of October 10, 1882, inasmuch as in the preferred embodiment of my improvements I make use of a stop-gage consisting of two oppositely-placed bent or curved strips or tongues, as described in Letters Patent No. 267,528, and these strips or tongues constitute, also, the lead-grasping jaws or device, as described in No. 265,730, although they do not close directly upon the lead, as described in the patent last named, but upon a collapsible nozzle or tube from which the lead is designed to protrude.

My improvements have been designed with more particular reference to a pencil of the well-known "Automatic" type, and it is in this connection that I have illustrated them in the accompanying drawings, to which reference will now be made, in order to explain the nature of the improvements and the manner in which they may be carried into effect.

Figure 1 is a longitudinal central section of the lead and crayon holder with the parts in the position which they occupy when the lead is not projected. Fig. 2 is a like section of the same with the parts in the position which they assume when the stop-gage has been pushed forward the proper distance and the lead has dropped so as to protrude from the nozzle of the pencil as far as permitted by said stop-gage. Fig. 3 is a like section with the parts in the position they assume after the stop-gage has withdrawn, leaving the lead protruding and clamped in place.

A is the sheath or handle. B is the pressure-cap. C is the retracting-spring. D are the jaws, which in this instance constitute the stop-gage, attached to and moving with the pressure-cap, the attachment being effected in the present instance by a stem or tube, D'. The retracting-spring is contained in a short metallic sleeve or lining, E, fixed within the upper portion of the sheath, and is confined between the pressure-cap and an annular internal shoulder, *a*, in the lining E.

The organization thus far does not differ materially from the well-known Automatic pencil, save that the stop-gage jaws, which have a spring action, normally tend to close together instead of to expand, as in the ordinary Automatic pencil, and are otherwise constructed, as will be presently described, in order to fit them for the stop-gage use for which they are intended.

Within the stop-gage jaws is a lead-containing tube or receptacle, F, at the front end of which is a split or collapsible nozzle, upon which the jaws normally close, and with reference to which they are longitudinally movable, for which purpose the said tube F is in the present instance attached to the sheath A or the metal lining E thereof by a pin, *b*, which extends through said lining and inner tube, and passes through longitudinal slots *c* in the intermediate jaw-supporting stem or tube, D'. The receptacle F and its collapsible nozzle are in one, in the present instance consisting of a split sheet-metal tube whose front end normally projects somewhat beyond the stop-gage jaws, as indicated in Fig. 1, and the parts of this split end, when relieved from the closing pressure of the jaws, spread apart far enough to permit the lead to pass freely, and

the extreme outer ends of these parts are slightly bent inward, as indicated, so that they will bite or hold firmly the lead when closed upon the same. The extent of the longitudinal movement of the stop-gage jaws with reference to the collapsible nozzle or tube is such that when moved forward to their full extent they will project a distance beyond the nozzle equal to the length of lead which should protrude from said nozzle.

When the stop-gage jaws are pushed forward beyond the lead-holding nozzle, they close together or toward one another to such an extent that the lead when it drops cannot pass them, and at the time they are pushed forward to the full extent required their pressure is entirely removed from the nozzle, which can thus expand, as seen in Fig. 2, the jaws or their stems being for this purpose outwardly bent or recessed or equivalently formed at the points *d* to permit this expanding to take place. If under these conditions the pencil be turned point downward, the loose lead *x*, contained in the tube or receptacle F, will drop until its protruding end brings up against the stop-gage jaws, as indicated in the figure last referred to. In this position the lead protrudes the proper distance from the nozzle. If, now, the pressure of the hand on the pressure-cap be removed, the retracting-spring draws back the jaws. The instant they move back, however, with reference to the nozzle, their contracted portions just in front of the recesses *d* bear upon the collapsible or split nozzle and cause it to close upon the lead, thus preventing the latter from being carried back by the jaws. Thus the jaws move back to normal position upon the nozzle and clamp it firmly upon the lead, being assisted in this operation by the contracted front end, A′, of the sheath, into which they are drawn by the force of the retracting-spring. By being thus drawn into the part A′, the jaws are positively closed upon the nozzle or tube, which is thus caused to hold the lead with entire firmness.

I have described the best way at present known to me of carrying my invention into effect; but I do not wish to be understood as restricting myself to the mechanical details described, for the same can be very considerably varied without departure from the invention. What is essential is, that the nozzle or device from which the lead protrudes should be collapsible in the sense that it can be contracted so as to close upon the lead, that when the stop-gage is pushed forward to the prescribed extent said nozzle should be open to permit the loose lead to drop as far as permitted by the stop-gage, and that when the stop-gage begins to move back with reference to the nozzle the latter should thereby be closed, so as to hold the lead while the stop-gage is returning to its normal position. This action of the stop-gage is due to the fact that it is provided with what may be termed, for convenience' sake, "stops," in this instance consisting of the extreme front ends of the jaws and the internal shoulders at the points *d*, whereby the stop-gage jaws are caused both to limit the extent to which the lead may protrude from the pencil and, in accordance with the direction of their movement, to cause the nozzle to clamp or release the protruded lead. Manifestly this result can be attained in a variety of ways, some of which I have described in other applications for Letters Patent; and I wish it to be understood, therefore, that by the term "stops" I do not mean merely the particular stops herein described and shown in illustration of the invention, but intend any equivalent construction and arrangement of the stop-gage by which it will be caused to act in connection with the collapsible nozzle in the twofold capacity above stated, believing this to be, broadly, new with myself.

What, therefore, I claim as new and of my own invention is—

1. The combination of the sheath or handle, the lead tube or receptacle, and collapsible nozzle, from which the lead protrudes when in use, and the stop-gage jaws longitudinally movable with reference to said nozzle, provided with stops to limit the extent to which the lead can protrude from the pencil, and, in accordance with the direction of the movement of the jaws, to cause said nozzle to clamp or release the protruded lead, substantially as hereinbefore set forth.

2. The combination of the sheath or handle, the lead-tube and collapsible nozzle, the stop-gage jaws longitudinally movable with reference to said nozzle, provided with stops both to limit the extent to which the lead can protrude and to cause the nozzle to clamp or release the lead, the pressure-cap, and the retracting-spring, substantially as and for the purposes hereinbefore set forth.

3. The combination, substantially as hereinbefore set forth, with the sheath or handle and the lead tube or receiver having a split front end or nozzle normally open for the free passage of the lead, of longitudinally-movable stop-gage jaws normally closed upon said nozzle and provided with stops, arranged, when pushed forward beyond said nozzle, to relieve the latter from pressure and permit it to open for the free passage of the lead, and also to limit the extent to which the released lead can drop from the pencil, substantially as and for the purposes set forth.

4. The longitudinally-movable stop-gage jaws recessed to permit the expansion of the lead nozzle or tube, the sheath or handle, the lead-tube attached to said handle and inclosed or surrounded by the stop-gage jaws, the pressure-cap, and the retracting-spring, these parts being combined and arranged for joint operation substantially as and for the purposes hereinbefore set forth.

5. In a lead and crayon holder, the combination, with a lead tube or receiver terminat-

ing at its front end in clamping-jaws, of a longitudinally-movable stop-gage provided with stops to limit the extent to which the loose lead in the said tube can drop from the pencil, and, according to the direction of movement, to cause said clamping-jaws to close upon or release the lead, substantially as and for the purposes hereinbefore set forth.

In testimony whereof I have hereunto set my hand this 7th day of March, 1885.

CLAES WM. BOMAN.

Witnesses:
LEOPOLD ANSBACHER,
C. S. BRAISTED.