

(No Model.)

C. W. BOMAN.
LEAD AND CRAYON HOLDER.

No. 261,659.

Patented July 25, 1882.

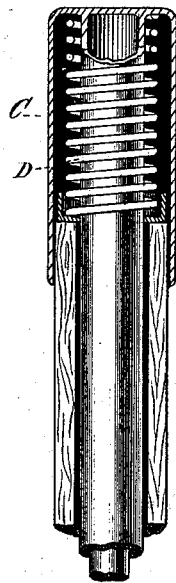


Fig. 1.

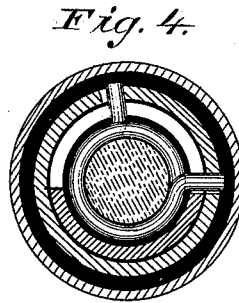


Fig. 4.

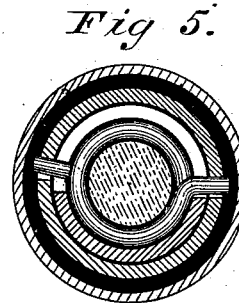


Fig. 5.

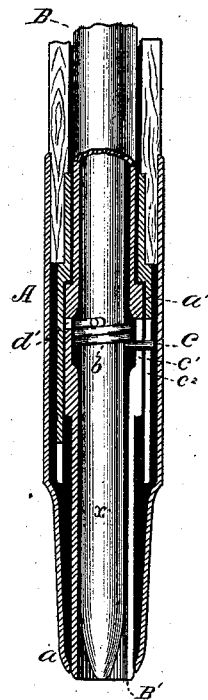
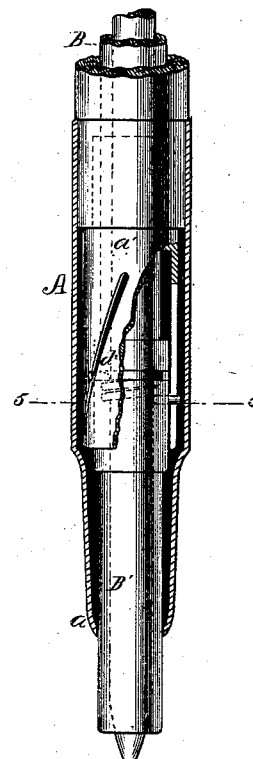
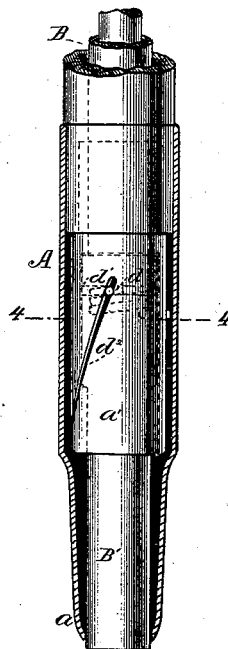


Fig. 2.

Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

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LEAD AND CRAYON HOLDER.

SPECIFICATION forming part of Letters Patent No. 261,659, dated July 25, 1882.

Application filed May 12, 1882. (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 relates to that kind of lead and crayon holders known as the "Automatic," in which the clamping and releasing of the lead is effected by the longitudinal movement of a lead-containing tube or other instrumentality for operating the lead-clamping mechanism, said tube being usually moved in one direction by pressure applied to a pressure-cap and in the other direction by a retracting-spring.

My invention has reference mainly to the lead clamping or grasping device; and it consists in forming that device of an expansible ring composed of one or more turns of spirally-coiled wire, which is carried by the lead-containing tube, and has one or both of its ends connected to the sheath or case, or some appropriate part of the pencil which does not partake of the longitudinal movement of the said tube, in such a manner that the movement of the tube in one direction will cause the clamping-ring to expand and release the lead and in the other direction will cause the ring to contract and close upon the lead.

The nature of my invention and the manner in which the same is or may be carried into effect will be understood by reference to the accompanying drawings, in which—

Figure 1 is a longitudinal central sectional elevation of a holder embodying my invention. Fig. 2 is an elevation of the front portion of the same with the sheath in section. Fig. 3 is a similar view, representing the parts in a different position. Figs. 4 and 5 are sections on line 4 4, Fig. 2, and line 5 5, Fig. 3, respectively.

A is the case or sheath, terminating in the usual tip or nozzle, *a*. B is the lead-containing tube, longitudinally movable within the sheath. C is the pressure-cap, mounted upon the rear end of the tube; and D is the retracting-spring, confined between the head of the pressure-cap and the rear end of the sheath. These parts require no further description, inasmuch as in their construction and general arrangement

they resemble like parts of the "Automatic" pencil, save that the lead-containing tube in the present instance does not terminate in lead-grasping jaws.

The lead-clamping device carried by the tube B consists of an expansible ring, *b*, composed of one or more turns of spirally-coiled wire. This expansible clamping-ring is carried by the lead-containing tube, and in the present instance is placed within the tube at or near its front end. One end, *c*, of the coil is attached to the tube, and the attachment in the present instance is made by turning this end outwardly and causing it to project through a longitudinal slot, *c'*, in the tube, as well as through a like slot, *c''*, in the ferrule *a'* of the sheath, on which the tip *a* fits. The opposite end, *d*, of the coil is bent outwardly, and projects through a transverse slot, *d'*, in the tube into a spiral or inclined slot, *d''*, formed in the ferrule *a'*. It is preferred to contract the part of the tube in advance of the point where the expansible clamping ring is situated to a size to just about fit the lead *x*; and to this end it will be found convenient to insert in the front end of the tube a smaller and shorter tube, *B'*, secured in place by brazing, soldering, or any other convenient way. The ring in its normal position is contracted, so as to grasp the lead, and in this position its external diameter should be sufficiently less than the internal diameter of the lead-containing tube to leave room for it to expand to the requisite extent to release the lead. It is represented in its normal position in Fig. 2, the end *d* of the coil being at or near the rear end of the inclined slot *d''* in the ferrule *a'*, and the ring being closed upon the lead. By pushing forward the pressure-cap, and consequently moving forward the lead-containing tube B, the end *d* will be caused to travel along the inclined slot *d''*, as indicated in Fig. 3, with the effect of expanding the coil or ring and of releasing the lead. As soon as pressure is removed from the cap the retracting-spring returns the parts to their original position.

It is manifest that, if desired, the end *c* can also be arranged, like the end *d*, to work in an inclined slot in the sheath or ferrule. It is also manifest that the manner of mounting and se-

curing the expansible clamping-ring can be considerably varied without departure from my invention. I do not therefore restrict myself to the specific details herein described in
5 illustration of my invention; but

What I claim is—

1. The combination, with the pencil sheath or case and the longitudinally-movable lead-containing tube, of an expansible lead-clamping
10 ring composed of a coil of one or more turns of wire carried by the said tube, and having its ends connected to the said tube and sheath in such manner as to be thereby caused to expand or contract, according to the direction in
15 which the tube is moved, substantially as and for the purposes hereinbefore set forth.

2. The combination, with the pencil sheath and longitudinally-movable lead-containing tube, of the pressure-cap, the retracting-spring, and the expansible lead-clamping ring, composed of a wire coil carried by said tube and connected at its ends to the tube and the sheath, substantially as and for the purposes hereinbefore set forth.

In testimony whereof I have hereunto set my
25 hand this 17th day of March, A. D. 1882.

CLAES W. BOMAN.

Witnesses:

C. S. BRAISTEL,
JOE W. SWAINE.