(Model.)

J. HOFFMAN.

Lead and Crayon Holder.

No. 235,150. Patented Dec. 7, 1880.

Fig. 1.

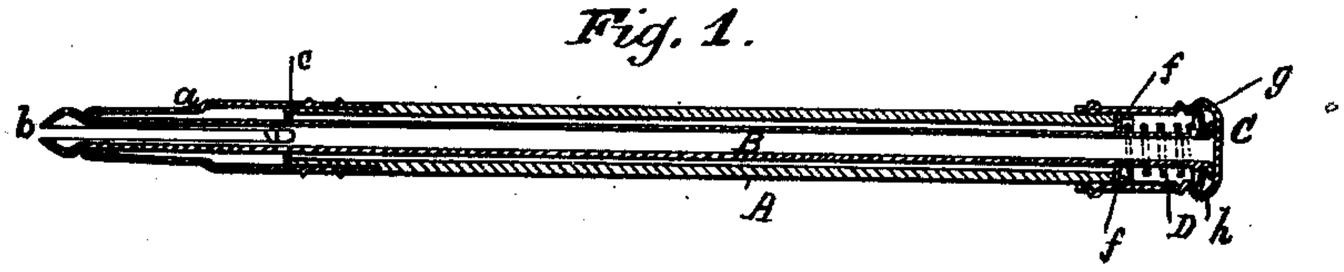


Fig. 2.

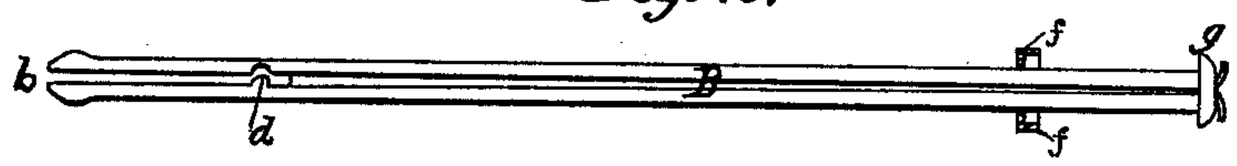
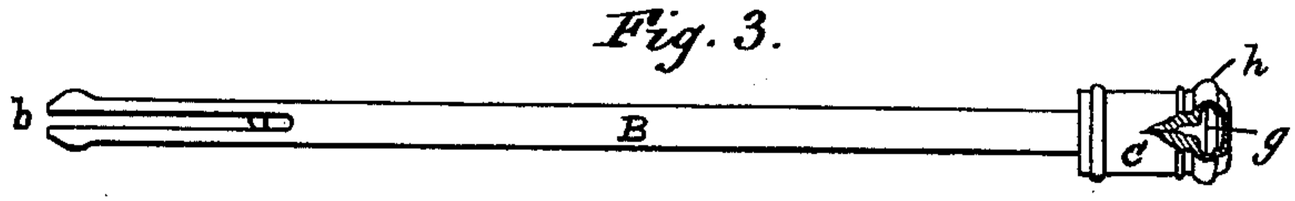


Fig. 3.



Witnesses:
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W. B. Masson

Inventor:
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UNITED STATES PATENT OFFICE.

JOSEPH HOFFMAN, OF NEW YORK, N. Y., ASSIGNOR TO JOSEPH RECKENDORFER, OF SAME PLACE.

LEAD AND CRAYON HOLDER.

SPECIFICATION forming part of Letters Patent No. 235,150, dated December 7, 1880.

Application filed August 28, 1880. (Model.)

To all whom it may concern:

Be it known that I, JOSEPH HOFFMAN, 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 holder known as the "automatic," in which a pressure-cap longitudinally movable on rear of the handle is used to move the appropriate portion of the holder against the stress of the retracting-spring, in order to release the hold of the jaws on the lead, as shown, for instance, in Letters Patent No. 215,521, dated May 20, 1879, and subsequently reissued November 18, 1879, Nos. 8,967 and 8,968; and my invention consists in certain details of construction and arrangement hereinafter pointed out, which simplify the fitting and joining together of the parts of the pencil, rendering soldering unnecessary, and making a stronger and in some respects a better holder.

In the accompanying drawings the holder represented is the ordinary automatic holder now in the market with my improvement attached.

Figure 1 is a longitudinal central section of the holder. Fig. 2 is a view of the lead tube or receiver, having on its rear end the concavo-convex washer or disk by means of which it is joined to the pressure-cap. Fig. 3 is a like view of the tube with its pressure-cap joined to it, the cap being broken away in order to show the interior connection.

A is the usual tubular case or handle, terminating at the front in the contracted or tapering nozzle *a*.

B is the longitudinally-movable lead tube or receiver, with the usual jaws *b* at its front end.

C is the pressure-cap, and D the retracting-spring confined between the cap and the rear end of the handle, the rearward movement of the lead-tube, due to the action of the spring, being limited by the annular washer *c* encircling the tube between the front end of the body of the handle and the stud *d* on the tube, as shown and described in Letters Patent No. 218,267, dated August 5, 1879. The parts named are combined and operate as described in Letters Patent first-above recited.

My improvements relate, first, to the mounting of the retracting-spring, and, secondly, to the connecting of the cap and tube or other stem to be operated by said cap.

It has been found necessary for various reasons—among others to prevent the parts from interfering and to avoid liability of the end of the spring next the handle entering the bore thereof—to provide a distinct bearing for said portion of the spring. This I do by mounting on the tube B a loose annular cup-shaped receiver, *f*, which rests, as shown, on the rear or upper end of the handle, and receives within it the front end of the spring, which is there confined and prevented from all lateral displacement or spread. The cup is attached neither to the tube nor the handle, but is held against the end of the latter by the stress of the compressed spring. This arrangement has been found to be not only simple and inexpensive, but most effective to prevent any difficulty such as above alluded to.

To solder, or indeed otherwise rigidly attach, the cap to the tube has been not only somewhat expensive, but has been productive of trouble in another way. Those unacquainted with the mode of operation of the automatic holder usually imagine that the lead is clamped or released, or in some way brought into and out of position, by the action of a screw, and, failing to move the nozzle, they are very apt to attempt to twist or turn the cap at the other end of the handle, which, when the cap and tube are rigidly secured together, twists and strains the tube, and often injures not only it but also the lead which it contains, particularly if the lead happen to be grasped by the jaws. All these difficulties I remove by uniting the tube and the cap in such a way that the latter may be rotated independently of the tube. I mount on the rear of the tube a concavo-convex washer, *g*, which is secured thereon by swaging or upsetting the end of the tube, as shown in Fig. 2. This end of the tube is then inserted into the cap so as to be against the head of the latter, there being formed in the cap an annular internal offset or groove, *h*,

opposite the point to which the washer *g* comes. The latter is then, by suitable tools, flattened or spread out to the form of a flat disk, the circular exterior edge of which enters and engages the groove, as shown in Fig. 3. By this means the cap and tube must move together longitudinally, while at the same time the cap is free to turn or revolve without imparting such movement to the tube. The spring, inasmuch as it rests at one end in the cup-bearing piece *f* and at the other end bears against the disk *g*, will likewise be practically uninfluenced by rotary motion of the cap.

It will, of course, be understood that the cap may be thus united to any longitudinally-moving stem which it is to operate, in order to close the jaws upon or release them from the lead.

In putting together the parts of the holder, after the cap is joined to the tube, as shown in Fig. 3, the spring is slipped on the tube back into the cap. The loose cup-bearing *f* is then put on the tube, the spring being thus between said cup and the cap. The tube is then inserted, jaw end foremost, into the handle from the rear. Over its protruding front end is then passed the washer *e*, which is pressed back to the rear of the stud or lip *d* on the tube. The said lip is then raised by a suitable tool, and the parts are held firmly in position. All that remains to do is to fit and secure on the handle the nozzle *a*, and the holder is complete.

What I claim, and desire to secure by Letters Patent, is—

1. The combination, with the handle, the longitudinally-movable tube or stem, the pressure-cap, and the retracting-spring, of the loose cup-bearing piece encircling said tube or stem, interposed between the handle and the spring, and receiving the front end of said spring, as and for the purposes set forth.

2. The pressure-cap and longitudinally-movable tube or stem, connected by an annular washer or flange on the tube, which enters a corresponding annular groove in the interior of the cap, whereby the cap may be free to turn or rotate without imparting movement to the tube.

3. The combination, with the handle and the tube or stem, of the pressure-cap, united with the tube by a flange-and-groove connection, as described, and the retracting-spring inclosed within the cap, and having its bearing at one end in the cup-bearing piece and at the other end against the flange of the tube, as herein shown and set forth.

4. In a lead and crayon holder, the combination, substantially as set forth, with the handle or case and the longitudinally-movable tube or stem which operates the lead-holding jaws, of the pressure-cap swiveled to the said stem, so that it may rotate independently thereof.

In testimony whereof I have hereunto set my hand this 20th day of August, A. D. 1880.

JOSEPH HOFFMAN.

Witnesses:
C. S. BRAISTED,
JOE W. SWAINE.