

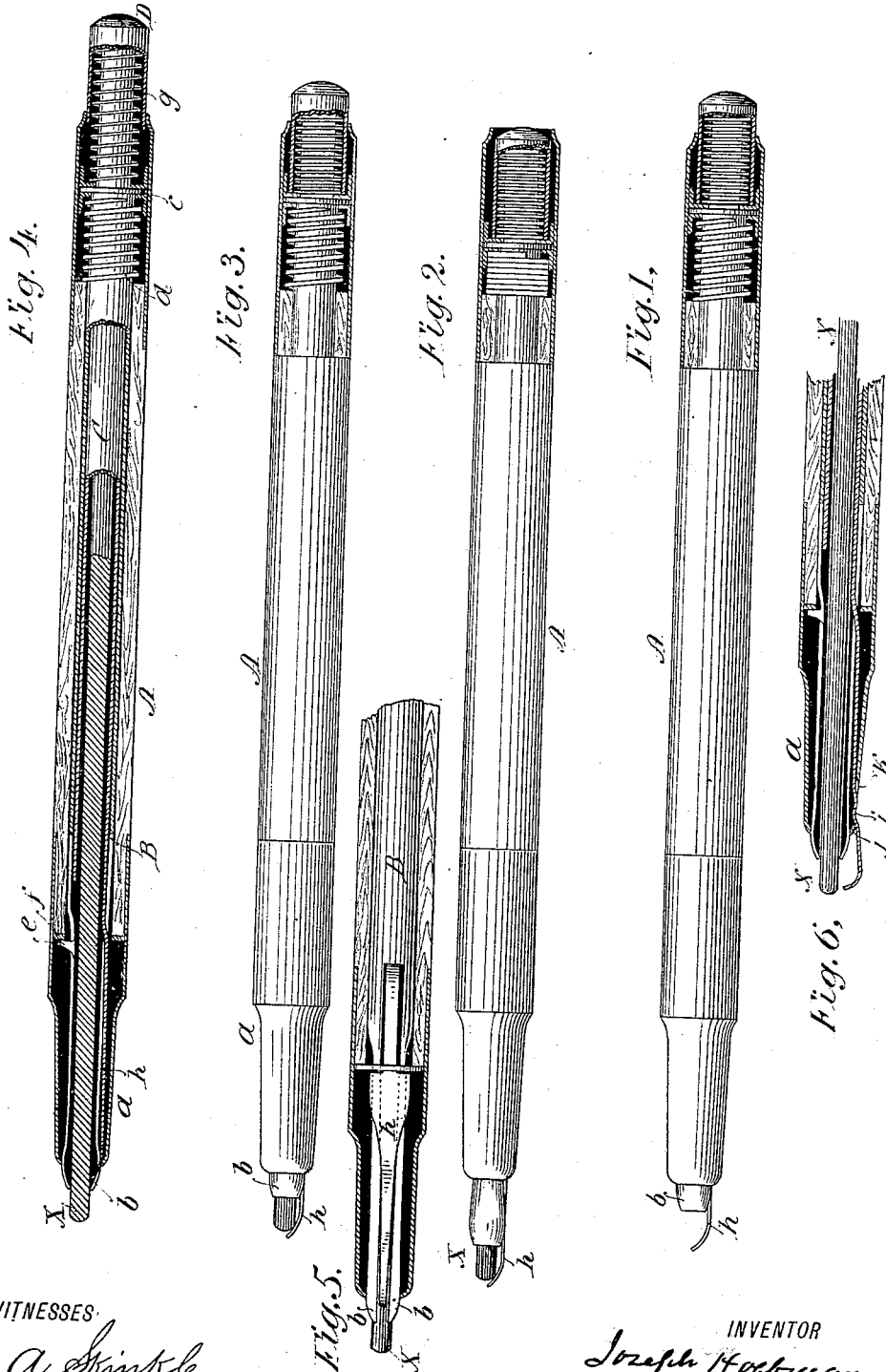
(No Model.)

J. HOFFMAN.

LEAD OR CRAYON HOLDER.

No. 267,309.

Patented Nov. 7, 1882.



WITNESSES

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UNITED STATES PATENT OFFICE.

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

LEAD OR CRAYON HOLDER.

SPECIFICATION forming part of Letters Patent No. 267,309, dated November 7, 1882.

Application filed March 14, 1882. (No 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 or 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. One illustration of this type of pencil is the so-called "automatic," to which, inasmuch as it is known and in general use, I shall refer for the purposes of explaining my present invention. In this pencil the lead when released from the jaws or clamping device is loose and free to slide back and forth in the holder. Consequently, in order to prevent the lead from dropping too far out from the point or tip of the holder, it is customary in setting the lead for use to put the point of the pencil near to the hand, the desk, or some other convenient object, so that when the released lead drops its point will come in contact with the object and further movement of the lead will be arrested. In other words, the desk, hand, or other object forms a stop, and the extent to which the lead can protrude from the holder is gaged by the distance between the stop and the point or tip of the holder.

It is my object to furnish the pencil itself with means whereby the lead can be prevented from dropping more than a predetermined distance, so that, supposing, for instance, the pencil to be held in the air point downward and the lead to be released from the clamp while the pencil is in this position, the lead will drop only far enough to cause its point or front end to protrude from the pencil the distance requisite to permit it to be used for writing or marking purposes; and to this end I provide the pencil with a device—which I shall, for convenience' sake, term a "stop-gage"—that acts to arrest the forward movement of the lead when its point has passed a predetermined distance beyond the tip or nozzle of the holder or pencil-case. It is this combination, with the lead-containing case or sheath, the lead grasping or clamping device, and

means for causing the same to release its hold on the lead, of a stop-gage which mainly characterizes my invention.

The stop-gage may be constructed and applied in many and various ways, some of which will be described in other applications for Letters Patent. I prefer to so apply it that it will act at the point of the lead, instead of at the rear, (for in this way the lead is left as loose and free as in the ordinary automatic,) except in so far as it is controlled by the stop-gage, and, like the automatic lead, can be slipped into and out from the holder without trouble. It is this arrangement which I have shown in illustration of my invention in the drawings, hereinafter referred to. I have also there represented the stop-gage as adapted to be projected beyond the pencil or withdrawn into or upon the same, according to the requirements of the case; and I have further represented it as adapted to be operated by the same spring-pressure cap or other instrumentality that operates the lead-clamp or grasping-jaws, the arrangement being such that when the cap is pressed forward the stop-gage is first projected beyond the pencil-point the proper distance before the clamp releases the lead or opens to permit the latter to pass; and when the cap is released the stop-gage maintains its position until the clamp closes on the lead and then withdraws to its first or normal position.

To enable others skilled in the art to understand and use my invention, I shall now proceed to describe the manner in which the same is or may be carried into effect, by reference to the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section, of a lead and crayon holder embodying my invention, with the parts in the position which they assume when the stop-gage alone is projected from the sheath. Fig. 2 is a like view with both the stop-gage and the lead-grasping jaws projected from the sheath. Fig. 3 is a like view with the parts in the position they assume in returning to normal position after the jaws have closed on the lead and before the stop-gage has withdrawn. Fig. 4 is a longitudinal section of the holder, with the parts in the position which they occupy when the lead projects and is ready for use. Fig. 5 is a sec-

tional elevation of the front part of the holder at right angles to the plane of section in Fig. 4. Fig. 6 is a longitudinal section of the front portion of a holder, illustrating a modified arrangement of the stop-gage, to be hereinafter referred to.

The pencil shown in the drawings is of the kind known as the "automatic."

A is the sheath or case, terminating in the usual tip or tapering nozzle, *a*.

The lead-clamp is composed of the spring-expanding jaws *b*, which are attached to or form part of the longitudinally-movable tube B, on the rear end of which is soldered or formed a flange, *c*, between which and the rear end of the sheath A is confined a spiral spring, *d*, (answering to the retracting-spring of the automatic,) which acts to retract the jaws into the nozzle, and to thus cause them to close. The extent to which the tube can be retracted is limited by a lip or projection, *e*, formed on it in front of a washer, *f*, at the front of the sheath. Thus far there is nothing essentially novel in the pencil.

Within the tube B is a second tube, C, which extends out beyond the rear end of tube B and is capable of longitudinal movement independently thereof. The end of the smaller tube C is surmounted by a cap, D, which serves as the pressure-cap, and between the head of the cap and the flange *c* is confined a second spring, *g*. The spring *d* is considerably stiffer than spring *g*, in consequence of which, when the cap D is pressed forward, the spring *g* will be compressed fully before the spring *d* begins to be compressed, the result being that when the cap is pressed the tube C will first move forward alone for a certain distance and then the two tubes will move forward together. If now the pressure be removed from the cap the stiffer spring *d* reacts first, and the two tubes move back together, until the stop *e* brings up against *f*, and then the reaction of the still compressed but lighter spring *g* will draw back the inner tube to its first position.

The outer tube is the instrumentality that acts upon the lead-clamping device, and in this instance it carries the jaws that constitute that device. The inner tube is the stop-gage carrier. It also serves as a receiver for the lead. It will be understood that it is not essential to employ tubes such as shown. These are convenient for the purpose; but I may use instead strips or pieces of other form, and it is not at all essential that the stop-gage should be carried by a tube working within the one that carries the jaws.

The stop-gage consists of a tongue of spring metal, *h*, which extends through a slot in the jaw-carrying tube, and is of such length that normally its front end reaches out as far as the jaws. It is made of light spring metal, bent or curved inwardly to some extent at its outer end and having a set which gives it a tendency at this end to extend across the path which the lead would take in dropping out from the

holder. This form of stop-gage is simple, effective, comparatively inexpensive, and readily applied.

Having described the mechanical construction of this embodiment of my invention, I shall now describe the mode of operation.

Suppose the pencil containing a lead, *x*, to be held in the air point downward, and that while it is in this position the pressure-cap be pushed forward. The first effect of this will be to compress the light spring *g* and to advance the stop-gage to the position shown in Fig. 1, the arrangement being such that by the time the spring is compressed fully the front end of the stop-gage will extend or lie in or across the path of the lead at such a distance in advance of the jaws that the lead, should it now drop, would bring up against the stop-gage at a time when its point had passed the proper distance beyond the jaws. Further pressure on the cap compresses the stiffer spring *d*, and the jaws and stop-gage, still maintaining their relative positions to one another, move forward far enough to permit the jaws to expand, and the lead, now unconfined, drops forward and brings up against the stop-gage, as shown in Fig. 2. Pressure is now removed from the cap. The stiff spring *d* first reacts, and draws back both jaws and stop-gage without disturbing their positions with respect to one another until the jaws close upon and grasp the lead, as indicated in Fig. 3, and then, the tube B being thus rendered incapable of further rearward movement, the lighter spring *g*, by its expansion, retracts the stop-gage to its original and normal position, as indicated in Fig. 4. The tongue *h*, being light and flexible, easily yields, so as to pass back along the lead without difficulty or undue friction.

By the modification illustrated in longitudinal section in Fig. 6, I can give the stop-gage a lateral movement, by which, when it moves back after gaging the lead, it can simultaneously be moved outwardly in such manner as to be removed from contact with lead during such backward movement. To this end the elastic tongue that constitutes the spring-gage can be formed or otherwise provided with a cam-like projection, *i*, on its inner face, to act in conjunction with a bearing-surface or bridge, *j*, on the tip or nozzle *a*. The stop-gage projects through a slot, *k*, in the tip, and as it moves back and forth its cam *i*, riding over the bearing-surface or bridge *j*, will throw the stop-gage outwardly, and thus carry it out of contact with the lead. When the stop-gage is projected to the full extent its cam will pass beyond and clear the bridge, and will thus permit the outer end of the stop-gage to intercept the lead.

I have described one way of carrying my invention into effect; but I desire it to be understood that I do not restrict myself to the mechanical details herein illustrated. A stop-gage to limit the protrusion of the lead from

the pencil can be made and applied in various ways, and numerous mechanical expedients for operating the same will readily suggest themselves to those skilled in the art to which this invention pertains. I do not therefore restrict myself to the specific instrumentalities herein shown and described in illustration of my invention; but

What I claim as my invention is—

10 1. The combination, with the lead-containing case or sheath and lead clamping or grasping and releasing mechanism, of a stop-gage arranged and operating to limit the extent to which the lead when released can drop or pro-

15 2. In a lead or crayon holder, a movable stop-gage adapted to be projected beyond the point or tip of the holder, and when thus projected to extend into or across the path of the lead at a predetermined distance from the end of the holder, so as to limit the extent to which the lead shall protrude therefrom, substantially as and for the purposes hereinbefore set forth.

25 3. The combination of the lead-containing sheath, lead clamping or grasping and releasing mechanism, and a longitudinally-movable stop-gage contained in said sheath and adapted to be projected therefrom beyond the tip or nozzle and into or across the path of the lead, substantially as and for the purposes hereinbefore set forth.

4. The combination, with the lead-containing

sheath and lead clamping or grasping and releasing mechanism, of a longitudinally-movable stop-gage, and a pressure-cap and retracting-spring connected with and adapted to operate said stop-gage, substantially as and for the purposes hereinbefore set forth.

5. The combination, with the lead-containing sheath and lead clamping or grasping and releasing mechanism, of a stop-gage connected to and operated by the pressure-cap that forms part of the lead-releasing mechanism, substantially as and for the purposes hereinbefore set forth.

6. The lead-grasping mechanism and the stop-gage, in combination with the lead-containing sheath or case, the pressure-cap and the two retracting-springs, the stiffer one controlling the lead-grasping mechanism and the lighter one controlling the stop-gage, substantially as and for the purposes hereinbefore set forth.

7. The combination, with the case or sheath of the longitudinally-movable stop-gage provided with a cam or projection, which co-acts with a bearing-surface in or on the sheath during the longitudinal movement of the stop-gage, substantially as and for the purposes hereinbefore set forth.

In testimony whereof I have hereunto set my hand this 13th day of March, 1882.

JOSEPH HOFFMAN.

Witnesses:

LEOPOLD ANSBACHER,
JOE W. SWAINE.