

(No Model.)

J. HOFFMAN.

LEAD AND CRAYON HOLDER.

No. 290,684.

Patented Dec. 25, 1883.

Fig. 1.

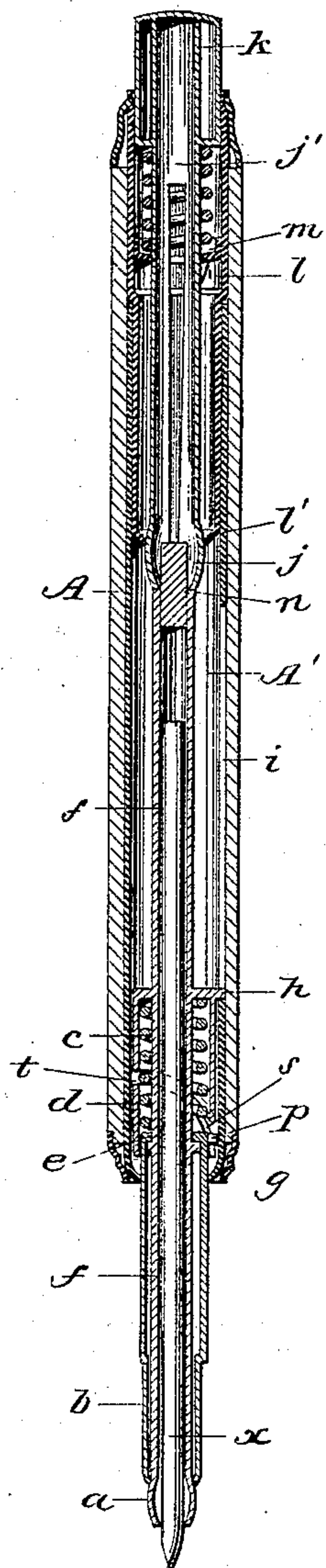


Fig. 2.

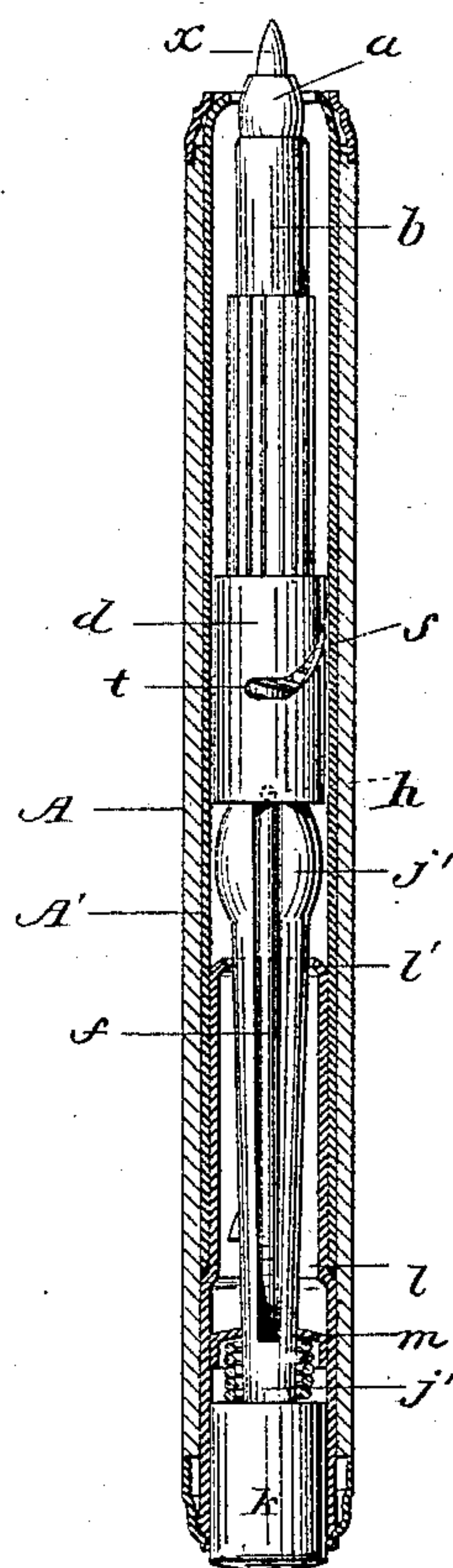
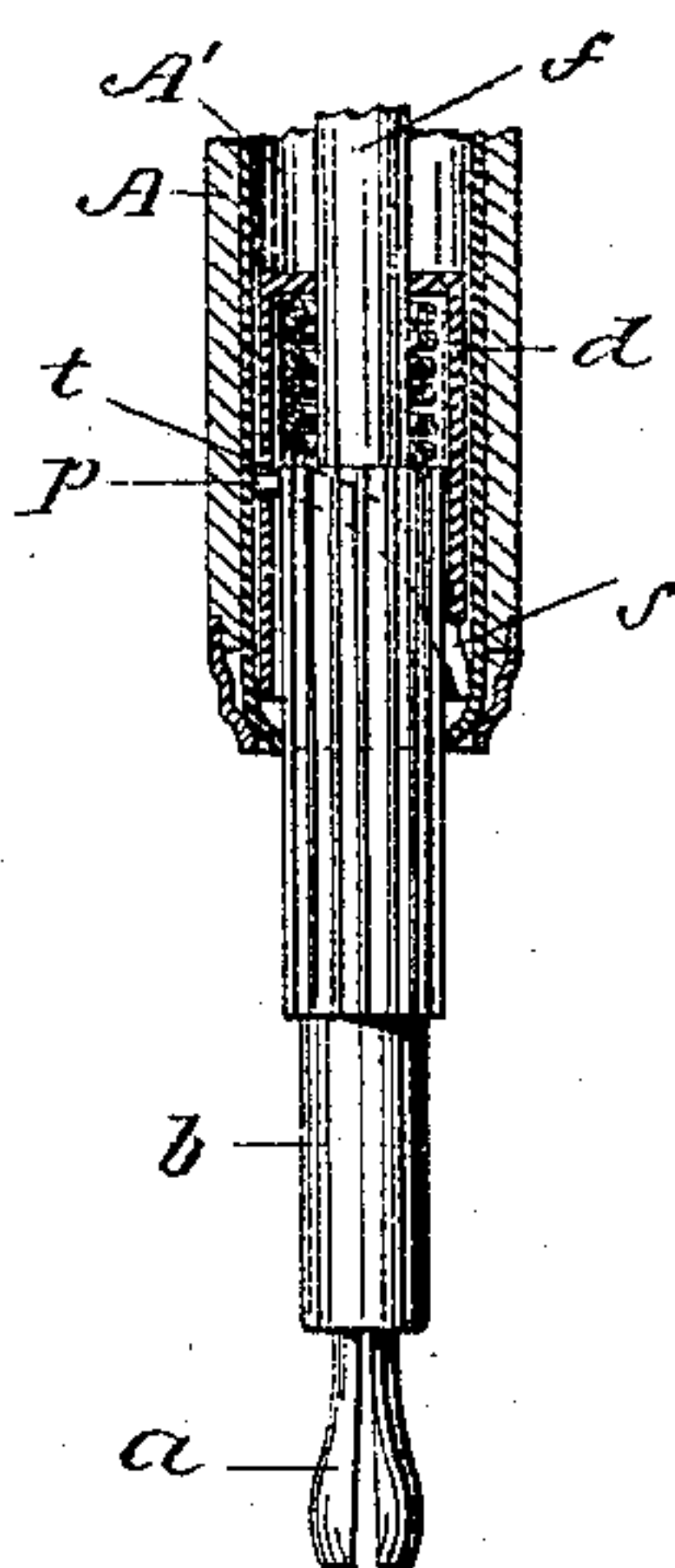


Fig. 3.



witnesses
E. W. Dick
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UNITED STATES PATENT OFFICE.

JOSEPH HOFFMAN, OF NEW YORK, N. Y., ASSIGNOR TO HENRY BEROLZ-
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LEAD AND CRAYON HOLDER.

SPECIFICATION forming part of Letters Patent No. 290,684, dated December 25, 1883.

Application filed October 5, 1883. (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 and Crayon Holders, of which the following is a specification.

This invention relates to lead and crayon holders in which the lead-holding device is of the "automatic" type, consisting of jaws or their equivalent, combined with a spring-impelled tip, or its equivalent, which normally acts to close the jaws upon the lead; and it mainly consists in providing means—which may be termed a "positive" lock or detent—whereby these two devices, when moved relatively to one another in a direction to permit the jaws to release the lead, may be locked in this position against the stress of the spring, so as to permit the lead-grasping jaws to remain open, for the purpose of facilitating the operation of adjusting the lead.

The invention is applicable to automatic lead and crayon holders generally, but has more particularly been designed with reference to the needs of a "gravity-pencil" of this type—that is to say, a pencil in which the lead and crayon holder proper of the automatic type, arranged within a sheath or case in such manner that it can move freely back and forth therein within prescribed limits, is combined with spring-controlled locking mechanism, whereby it is held in its protruded or its retracted position; and it is in this connection that I shall describe it by reference to the accompanying drawings, in which—

Figure 1 is a longitudinal central section of the holder with the lead-holding device protruded point downward. Fig. 2 is a like section, partly in elevation, of the same, point uppermost, with the parts in the position they occupy when the lead-holding device has dropped back into the case and the pressure-cap is still pressed forward. Fig. 3 is a like section of the front portion of the instrument with the parts of the lead-holding device in the position they assume when the tip is drawn back from the jaws.

In the special structure shown in the drawings, which is the preferred embodiment of the invention, the lead-holding device con-

sists of normally-open spring-jaws *a*, of the automatic type, which are pressed together, so as to close upon the lead, by a longitudinally-movable spring-impelled tip, *b*, which is pushed forward by the spring *c*. The spring is inclosed in a barrel, *d*. It bears at the rear against the closed rear end of the barrel, and at the front against a disk or washer, *e*, which is fixed to the tip, and is of a size to enter the open front end of the barrel, and it encircles the tubular stem *f* of the spring-jaws, which stem extends back through and beyond the rear end of the barrel, to which it is fastened, and constitutes the lead-tube or lead-containing receptacle. A shoulder or stop, *g*, on the stem or tube *f*, which brings up against the disk or washer *e* of the tip, limits the extent to which the tip and stem can move longitudinally relatively to one another in the direction required to cause the jaws to close. By holding the tip in one hand and the barrel *d* or its attached tube *f* in the other, and moving them in opposite directions against the stress of spring *c*, the tip will be retracted from the jaws far enough to permit the latter to open and release the lead, which latter is shown at *x*.

The structure thus far described, which may be considered the lead-holder proper, is, as a whole, placed in a sheath or handle, *A*, in which it can slide freely back and forth, so that it can by gravity fall in one direction or the other, according to which end of the sheath is held uppermost. To confine this movement within prescribed limits, the barrel *d* is provided with a stud or finger, *h*, which enters a longitudinal slot, *i*, in the sheath or handle. The latter, it may be remarked, is conveniently made of an inner metal tube, *A'*, (in which the slot *i* is formed,) and an exterior cover or case, *A*, of hard rubber, which imparts a neat and pleasing finish to the handle. The slot *i* is of such length and so positioned that when the holder proper drops forward to the extent permitted the tip and jaws will protrude from the front end of the handle the proper distance for writing purposes, as seen in Fig. 1; and when, on the other hand, it drops back, it will be contained entirely within the handle, as indicated in Fig. 2. In this figure the point

of the pencil is represented as projecting a little beyond the case; but this is due to the pressure-cap being still in its advanced position. When the pressure-cap retires to normal position, (as it does when relieved from forward pressure,) it draws back with it the point entirely within the case. The barrel *d*, it will be noted, constitutes a safe and convenient receptacle for the spring *c*, and at the same time forms a guide, by which the holder is maintained in proper place and prevented from lateral play in the handle. With the holder proper and handle thus arranged together is combined locking mechanism, whereby the holder is locked in either its protruding or its retracted position, said locking mechanism being preferably spring-controlled and operated to move against the stress of its spring, for the purpose of releasing the holder by a longitudinally-movable spring-controlled pressure-cap at the rear end of the handle.

An article possessing the foregoing general characteristics is not here claimed, the same being the subject of Reissued Letters Patent No. 10,335, dated June 5, 1883.

The spring-controlled locking mechanism here shown is substantially like that represented in said Reissued Letters Patent, consisting of longitudinally-movable spring-jaws *j*, between which the lead tube or stem *f* of the holder proper extends into the tube *j'*, on which the jaws are mounted, said tube *j'* being fast at its rear to pressure-cap *k*, and being surrounded by a case or barrel, *l*, which fits and is fastened into the rear end of handle *A*. Between the head of the pressure-cap and a disk or washer, *m*, fastened in the interior of the case *l*, (through which the tube *j'* loosely passes,) is a retracting-spring, which draws back the jaws *j* into the contracted front end, *l'*, of the case *l*, thereby causing the jaws to close on the holder-stem *f*. By pushing forward the pressure-cap, the locking-jaws are opened and the released holder is free to move back and forth in the handle. When the holder is in its protruded position, Fig. 1, the locking-jaws close on the stem *f*, just in rear of a shoulder, *n*, thereon, thus locking the holder firmly in that position.

In order to provide for the convenient and ready adjustment of the lead between its grasping-jaws, I combine with the longitudinally-movable spring-impelled tip a positive lock or detent, whereby it will be held in its retracted position—that is to say, the position to which it is moved in order to release the jaws from its pressure. It is this feature which mainly constitutes my invention.

The positive lock or detent may be constructed in a variety of ways, and I do not desire to be understood as restricting myself to the special device about to be described.

The device which has been found on the whole the simplest and best adapted for practical use consists of what may be termed a bayonet "catch" or "fix," consisting of a

laterally-projecting stud, *p*, on the rear end of the tip *b*, (and formed in this case on the periphery of the washer *e* of the tip,) and a slot, *s*, in barrel *d*, which extends from the front of the barrel rearwardly a proper distance, and at its rear end terminates in a cross-notch, *t*. The stud is intended to work in this slot, the arrangement being such that when the tip *b* is drawn back the stud travels rearwardly in the slot. By the time the tip has been retracted far enough the stud comes opposite to the cross-notch *t*, when by a slight turn of the tip the stud can be caused to enter the notch, and thus lock the tip in its retracted position, as indicated in Fig. 3. A slight twist of the tip in the other direction releases it, and it is then free to spring forward and resume its normal position on the jaws.

The slot *p* may extend straight to the rear; but it is preferred to give it a slight curve, and to put the cross-notch on that side where it will be naturally entered by the stud on the tip.

By making the slot on a curve or spiral, the tip in its rearward movement has a slight movement of rotation, and the notch is so positioned that by a continuation of the same movement the stud will enter it.

I am aware that it is not new to retract the spring-impelled compressing-tip from the jaws of a holder by a lever or other means operating on the same from the exterior of the holder.

I am also aware that with the tip, the longitudinally-movable jaws, and retracting-spring of a holder there has been combined a cap or head united with the case of the holder by a pin and inclined-slot connection, whereby the head, when turned in the proper direction, will cause the jaws to advance against the stress of their retracting-spring for the purpose of releasing their hold upon the article inserted between them. I claim none of these things.

What I claim herein as new and of my own invention is as follows:

1. In an automatic lead and crayon holder, the combination, with the lead-grasping jaws and the spring-impelled tip, of a positive lock or detent, whereby when the tip is retracted or moved back from the lead-grasping jaws it may be locked in that position at will, substantially as hereinbefore set forth.

2. The holder proper, having a spring-impelled tip, combined with a detent, whereby said tip can be held retracted or away from the lead-grasping jaws, in combination with a sheath or handle, in which the said holder is bodily movable within certain limits, so that it may be protruded from or withdrawn within said handle, substantially as hereinbefore set forth.

3. In a gravity-pencil comprising a handle and a holder proper, freely movable within certain limits in said handle, as described, the

combination, in a holder proper, of lead-grasp-
ing jaws, a spring-impelled jaw-closing tip, a
stud on the tip, and a bayonet-slotted barrel
or tube attached to and moving with the stem
5 of said jaws, substantially as and for the pur-
poses hereinbefore set forth.

4. The barrel provided with a curved or
slanting slot terminating in a cross notch or
recess, in combination with the spring-im-
10 pelled jaw-closing tip, provided with a stud
to engage said slot, the lead-grasping jaws,
the lead-tube, and the sheath or handle in
which said parts are, as an entirety, movable
back and forth, substantially as and for the
15 purposes hereinbefore set forth.

5. In a gravity-pencil, the combination,

with the handle and the spring-controlled
holder-locking mechanism, of an automatic
holder proper, consisting of a lead-containing
tube, grasping-jaws carried thereby, a jaw- 20
closing tip mounted thereon, a spring for im-
pelling the tip, and a barrel which is attached
to the tube, incloses said spring, and constitutes
a guide for the holder proper in the handle, as
hereinbefore shown and set forth. 25

In testimony whereof I have hereunto set
my hand this 3d day of October, 1883.

JOSEPH HOFFMAN.

Witnesses:

C. S. BRAISTED,
JOE W. SWAINE.