(No Model.)

G. R. SANDELL.

AUTOMATIC HOLDER FOR PENCIL LEADS.

No. 394,016. Patented Dec. 4, 1888.

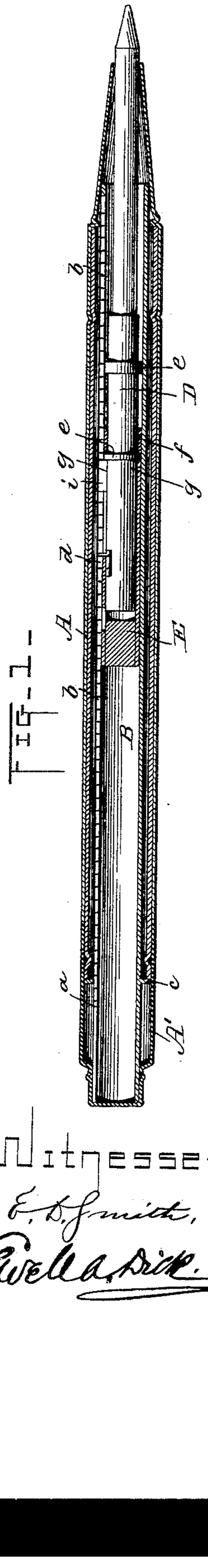

FIG. 1.

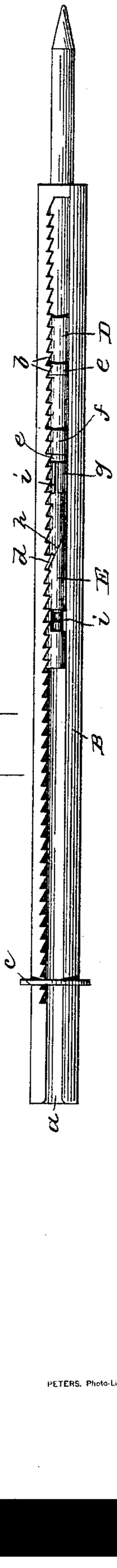

FIG. 2.

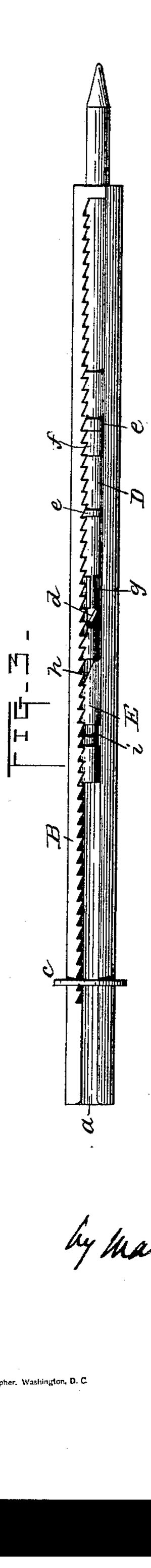

FIG. 3.

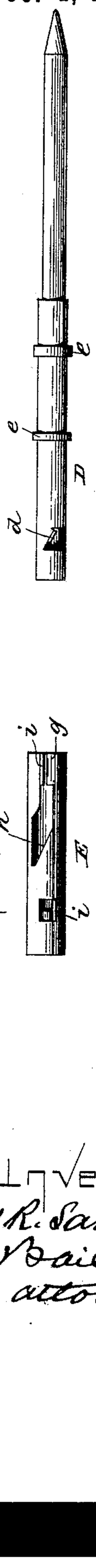

FIG. 5.

FIG. 4.

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UNITED STATES PATENT OFFICE.

GUSTAF R. SANDELL, OF NEW YORK, N. Y., ASSIGNOR TO THE EAGLE PENCIL COMPANY, OF SAME PLACE.

AUTOMATIC HOLDER FOR PENCIL-LEADS.

SPECIFICATION forming part of Letters Patent No. 394,016, dated December 4, 1888.

Application filed July 27, 1888. Serial No. 281,197. (No model.)

To all whom it may concern:

Be it known that I, GUSTAF R. SANDELL, of the city, county, and State of New York, have invented a new and useful Improvement in Automatic Holders for Pencil-Leads, Crayons, and other Articles, of which the following is a specification.

My invention relates to that kind of an automatic holder in which the lead is automatically protruded and locked or released and withdrawn according as the holder is held point upward or downward, being for this purpose provided with gravity or self-locking and releasing mechanism, which causes the locking or releasing of the lead-carrier according to the position of the holder. Such a holder, broadly considered, is not of my invention, and is not claimed by me. In the holder which I have devised the carrier freely sliding within prescribed limits is capable of a partial movement of rotation to bring a pin, tooth, or detent on it into and out of engagement with a notch or notches in one edge of a slot in which the detent moves, and it is actuated to so engage the notch by means of an independently-movable follower provided with an inclined or otherwise suitably formed face, which strikes the carrier and turns it far enough to bring its tooth into engagement with the notch. I desire it to be understood at the outset, however, that I do not claim, broadly, this last-mentioned feature. It is not of my invention.

My invention resides in the particular combination and arrangement of instrumentalities, hereinafter set forth, which have been devised by me for the purpose, and these can best be explained and understood by reference to the accompanying drawings, in which—

Figure 1 is a longitudinal axial section of the holder with the lead projected. Fig. 2 is a plan of the slotted tube and parts carried by the same, with the lead projected. Fig. 3 is a like view of the same parts with the lead retracted. Fig. 4 is a plan of the follower. Fig. 5 is a plan of the carrier.

A is the tubular sheath or handle of the holder, within which is secured (preferably detachably) the tube B, longitudinally slotted at *a*, and having along one edge of the slot *a* a series of notches or ratchet-teeth, *b*. The tube B is detachably secured in the sheath in order to permit it to be withdrawn, together with the pencil movement which it contains, whenever it is desired to renew or replace the lead. For this purpose it is thus secured in the present instance by causing its front end to take a bearing and to be centered in the front end of the sheath, and by providing it near its rear end with a circumferential flange, *c*, which bears upon the rear end of the sheath. A removable cap, A′, fitting closely over and down on the sheath and the tube, holds the latter firmly in position. At the same time whenever the cap is taken off, the tube B and its contents can readily be removed from the sheath.

Freely sliding within the tube B is the lead-carrier D, provided with an inclined tooth, *d*, which projects into the slot *a* and is designed to engage any one of the notches *b*. In order to confine the movement of the carrier within limits which will insure the proper protrusion and withdrawal of the lead, it is provided with two shoulders, *e*, between which is the stop *f*, which in this instance is a ring within and connected to the tube B and loosely encircling the carrier.

In order to permit the carrier to be advanced, so as to compensate for the wear of the lead, the stop-ring is made movable lengthwise of the tube B. For this purpose it fits the tube with enough friction to be held firmly to whatever position it may be brought, and yet to be moved by hand from one position to another. For instance, by pulling on the lead the ring by the rear shoulder *e* will be advanced, and by pushing back the lead the ring by the front shoulder *e* will be caused to recede. The best adjustment to preserve is that in which the point of the lead is just flush with the front end of the pencil-tip when the carrier is in retracted position.

The tube B contains also the weighted follower E, which is freely movable therein longitudinally independently of the carrier D. For convenience sake, and as a means of guiding the follower and of limiting its independent movement, its front end loosely encircles at *g* the carrier in advance of the tooth *d*. It

is provided some distance back of the ring *g* with an inclined or slanting face, *h*, which also is intended to act in conjunction with tooth *d*. The distance between ring *d* and the part *h* determines the extent of the independent movement of the follower. The follower is capable only of sliding movement, and is prevented from rotating in tube *b* by longitudinal fins *i* on it, which bear against the opposite longitudinal edges of the slot *a*.

Such being the construction, the mode of operation is as follows: When the pencil is held point downward, the carrier will drop as far as permitted by the stop *f*. As it brings up against this stop, the follower, which is moving on behind it, strikes with its incline *h* the carrier-tooth *d* and gives to the carrier a slight movement of rotation sufficient to bring the tooth *d* into engagement with that one of the notches *b* opposite which it may happen to be. In this way the carrier will be locked with its lead protruded so long as the pencil is point downward. As soon, however, as the pencil is turned the other way, the follower will fall away from the carrier, which then releases the slight hold of its tooth *d* upon the ratchet side of the tube and drops back until its front shoulder *e* brings up against the stop *f*, at which time the point of the lead should be withdrawn into the sheath.

Under the arrangement above described it will be noted that the carrier and its self locking and releasing mechanism are adjustable bodily and together within the tube or case in which they are contained, and, further, that the said tube, with its contents, is removable from the sheath or handle.

Having described my invention, I state my claims as follows:

1. In an automatic holder, the combination, with the sheath or handle, of a longitudinally-slotted tube or case within said sheath, and a lead-carrier and self locking and releasing mechanism therefor adjustable bodily and together within said tube.

2. The combination, with the sheath or handle, of the longitudinally-slotted case contained within and removable from said handle, and the lead-carrier and its self locking and releasing mechanism adjustable bodily and together within said tube, substantially as and for the purposes hereinbefore set forth.

3. The sheath, the longitudinally slotted and notched tube or case within the same, and the carrier freely movable by gravity within prescribed limits in said case and provided with a tooth to engage one of said notches and with stop-shoulders, as described, of a longitudinally-adjustable stop carried by the said tube or case and a follower provided with a face to act upon the tooth of the carrier, substantially as and for the purposes hereinbefore set forth.

4. The combination of the sheath A, the removable tube B, the cap A, the carrier D, the follower E, and the adjustable stop *f*, all constructed and arranged for joint operation, substantially as and for the purposes hereinbefore set forth.

In testimony whereof I have hereunto set my hand this 25th day of July, 1888.

GUSTAF R. SANDELL.

Witnesses:
SAMUEL KRAUS,
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