

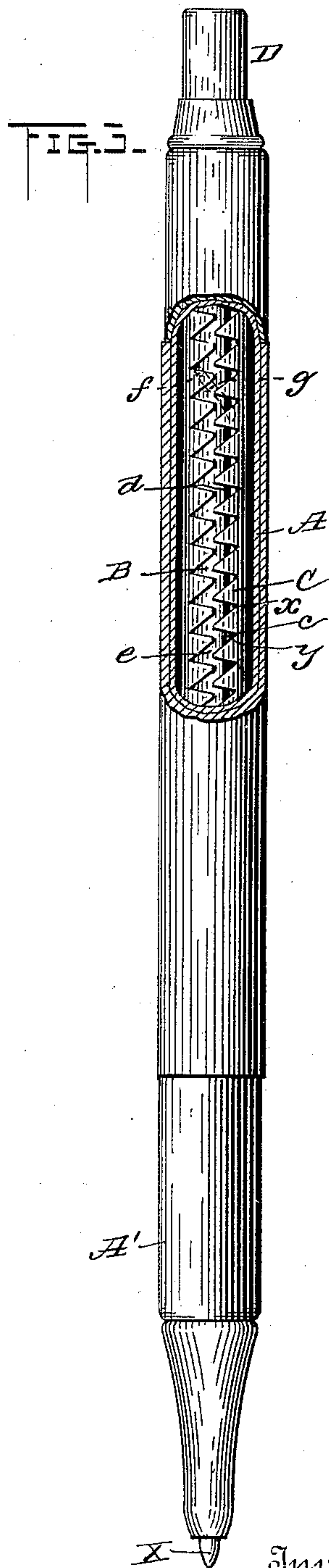
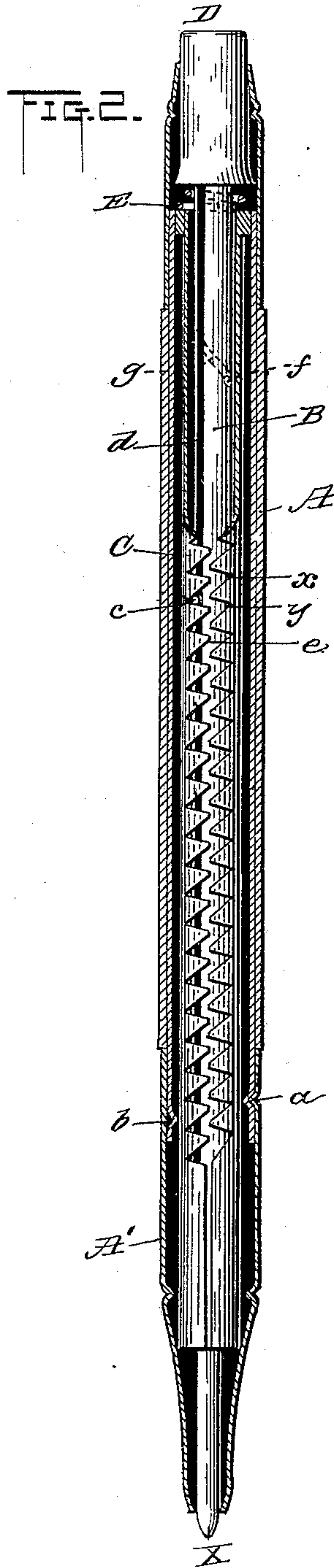
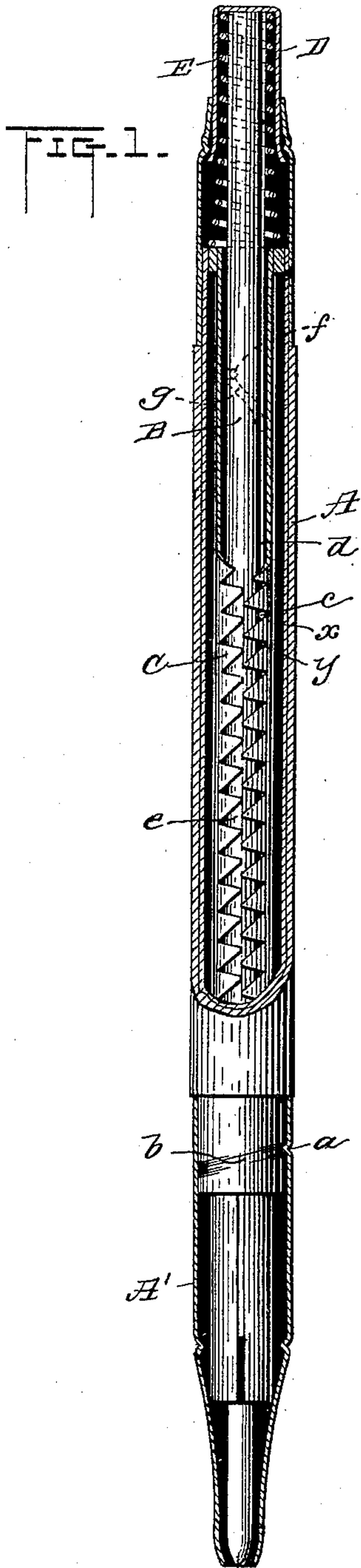
(No Model.)

2 Sheets—Sheet 1.

M. BAILEY.
LEAD OR CRAYON HOLDER.

No. 405,521.

Patented June 18, 1889.



Witnesses
E. D. Smith
E. Wellman

Inventor
M. Bailey

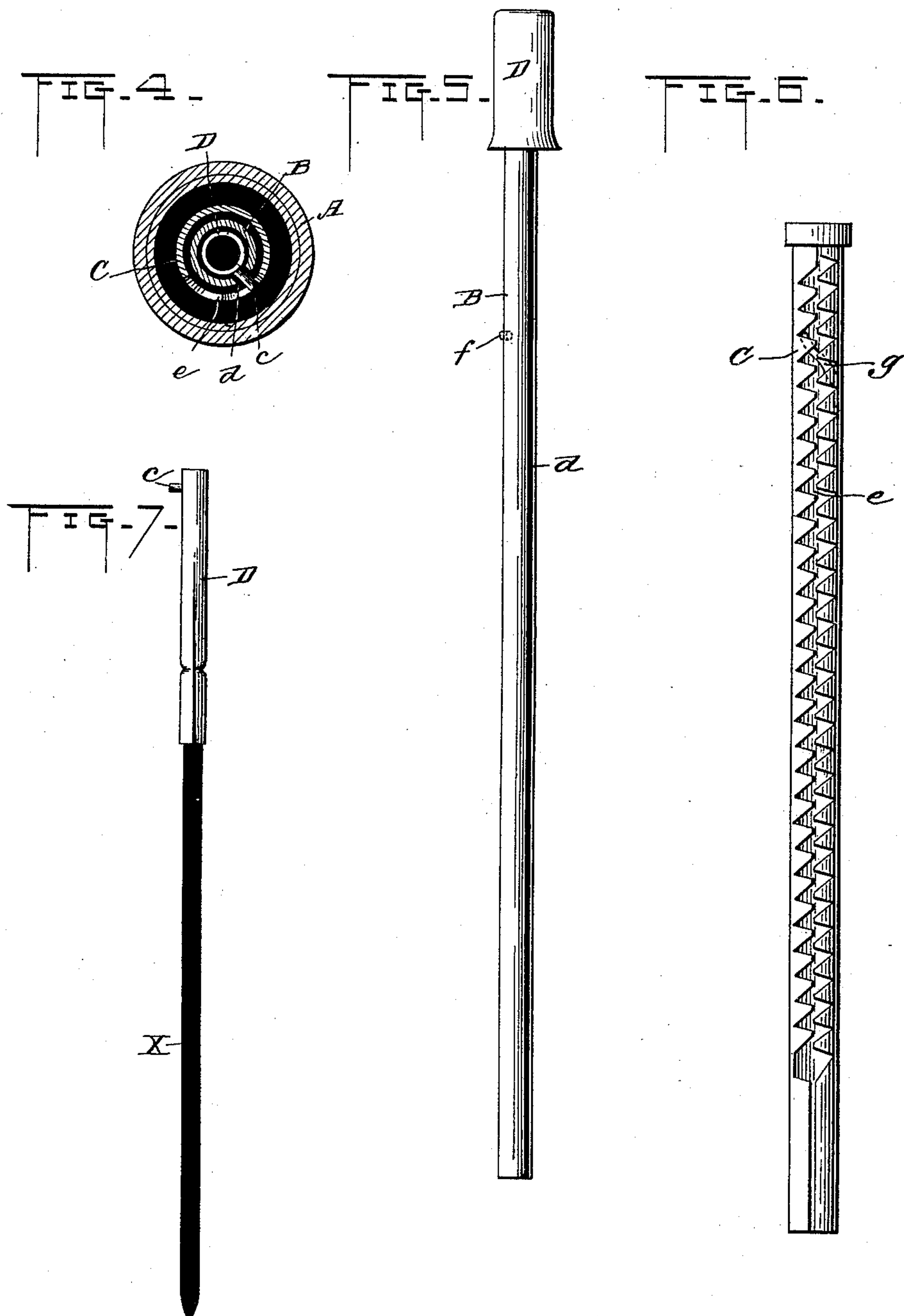
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E. D. Smith
Edw. A. Nick

Inventor

Manallus Bailey

UNITED STATES PATENT OFFICE.

MARCELLUS BAILEY, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR
TO THE EAGLE PENCIL COMPANY, OF NEW YORK, N. Y.

LEAD OR CRAYON HOLDER.

SPECIFICATION forming part of Letters Patent No. 405,521, dated June 18, 1889.

Application filed December 14, 1888. Serial No. 293,568. (No model.)

To all whom it may concern:

Be it known that I, MARCELLUS BAILEY, of Washington city, in the District of Columbia, have invented a new and useful Improvement in Lead or Crayon Holders, of which the following is a specification.

The holder in which my invention is comprised is one in which the carrier for the lead or other article is free to move by gravity within predetermined limits in the case or sheath of the holder. It combines in itself the characteristic feature of what is known in the market as the "stop-gage automatic pencil," together with a step-by-step feed for the lead-carrier.

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

Figure 1 is a longitudinal central section, partly in elevation, of a holder embodying my invention, with the parts in the position they occupy when the pressure-cap is retracted. Fig. 2 is a like view of the same holder, with the parts in the position which they assume when the pressure-cap is pushed forward against the stress of its retracting-spring. Fig. 3 is a similar view of the parts in the position they occupy when the pressure-cap is again allowed to recede. Fig. 4 is a cross-section of the holder on an enlarged scale. Figs. 5 and 6 are views, respectively, of the straight-slotted tube and the zigzag-slotted tube, which in conjunction determine the movement of the lead-carrier. Fig. 7 is a view of the lead-carrier.

A is the sheath or handle, of any approved pattern or construction, provided at the front end with a tip or nozzle A', preferably detachable, to which end in the present instance it is provided with an internal rib or lug *a*, which enters a screw-thread *b* on the front end of the holder. Within the sheath or handle are the two tubes B and C. Either one of these tubes may be within the other. In the present instance the straight-slotted tube B is inside the zigzag-slotted tube C. Within the tube B is the carrier D, which fits loosely therein, so that whenever it is re-

leased it may be free to move by gravity in either direction, according as the pencil is held point upward or point downward. It is provided with a socket, as usual, to receive the lead X, and it has a pin or lug *c*, which projects through the straight slot *d* of tube B into the zigzag slot *e* of tube C. With the carrier in this position it will be seen that by giving one of the tubes an oscillatory movement or a back-and-forth movement of partial rotation with respect to the other the carrier will by gravity travel from one jog to the next of the zigzag slot *e*, the direction of such travel being governed by which end of the tube is held uppermost, and the distance thus traveled being determined by the distance which separates the one jog from the next adjoining jog. This movement of rotation can be imparted to either one of the tubes. In the present instance it is imparted to the inner tube B, the outer tube C being stationary and fixed to the sheath or handle. The rear end of the inner tube B projects back through and beyond the open rear end of the outer tube C and is attached to the pressure-cap D, between which and a shoulder in or on the sheath or handle is interposed a retracting-spring E, as in the ordinary automatic holder.

To obtain the necessary oscillatory movement of the straight-slotted tube B, it is connected with the stationary tube C by a pin-and-inclined-slot connection, the pin *f* being on the tube B and the inclined slot *g*, into which the pin projects, being in the outer tube C. Under this arrangement it will be seen that when the tube B is moved longitudinally back and forth in the tube C it will have an oscillatory or partial rotary movement therein. It is convenient, mechanically, to obtain this oscillation through the longitudinal movement of tube B; but manifestly the tube can be permitted to have rotary movement only, and can be connected by a pin-and-slot connection with a plunger attached to the pressure-cap, so that a longitudinal movement of the cap will give rotary movement to the tube B. The arrangement shown in the drawings, however, is preferred, because it involves a less number of parts.

Normally the parts occupy the position represented in Fig. 1, in which the point of the lead is supposed to be within the handle. The lead is held firmly in this position by the tube B, which is turned so as to jam the carrier-pin *c* into one of the jogs, say jog *x*, of the zigzag slot *e*.

To project the lead, hold the pencil point downward, as in Fig. 1, and push forward the pressure-cap, as in Fig. 2. By this movement the pin will have been released by the partial rotation of tube B, and will have traveled by gravity down the incline which separates jog *x* from the jog *y* next below it, and will be opposite the last-mentioned jog, as seen in Fig. 2. If now the pressure-cap be released, the retracting-spring *E* will return to its original position, causing the straight-slotted tube B to partially rotate in the other direction, so as to return to its original position, with the effect of carrying the carrier-pin over into and jamming it in the jog *y*, as seen in Fig. 3. Each reciprocation of the pressure-cap with the pencil held point downward will advance the carrier one jog, and in this way a step-by-step feed for the lead is provided. In the same way the lead, when the pencil is held point upward, can be retracted. In this manner an "automatic" pencil is obtained having a gravity-moving lead or lead-carrier and combining what may be termed the "stop-gage" feature with a step-by-step feed. This result is due to the use in conjunction with the carrier of the straight-slotted tube B and the zigzag-slotted tube C, said tubes being

capable of rotary movement within certain limits with respect to each other, the motion being brought about in one direction by a spring and in the other direction by hand against the stress of the spring.

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

1. The combination of the pencil sheath or handle, the straight-slotted tube B, the zigzag-slotted tube C, the one rotatable within certain limits with respect to the other, the spring whereby the rotatable tube is caused to move in a direction opposite to that in which it is moved by hand, and the carrier provided with a pin which enters both the straight slot of tube B and the zigzag slot of tube C, substantially as and for the purposes hereinbefore set forth.

2. The combination of the pencil sheath or handle, the carrier, the straight-slotted tube B, and the zigzag-slotted tube C, the one rotatable with respect to the other, the longitudinally-movable pressure-cap connected to the rotatable tube in such manner that its longitudinal reciprocation shall cause oscillatory movement of the rotatable tube, and the retracting-spring, these elements being combined for joint operation substantially in the manner hereinbefore set forth.

In testimony whereof I have hereunto set my hand this 12th day of December, 1888.

MARCELLUS BAILEY.

Witnesses:

EWELL A. DICK,

WILL E. AUGHINBAUGH.