(No Model.)

C. W. BOMAN.

PEN AND PENCIL CASE.

No. 544,609. Patented Aug. 13, 1895.

Fig. 1.

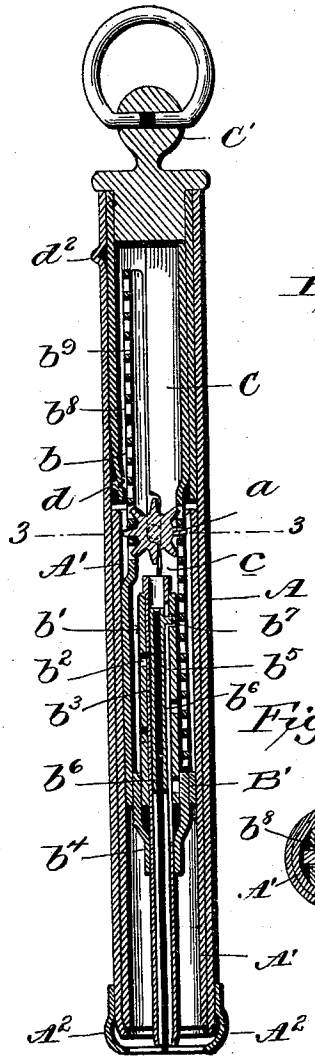


Fig. 2.

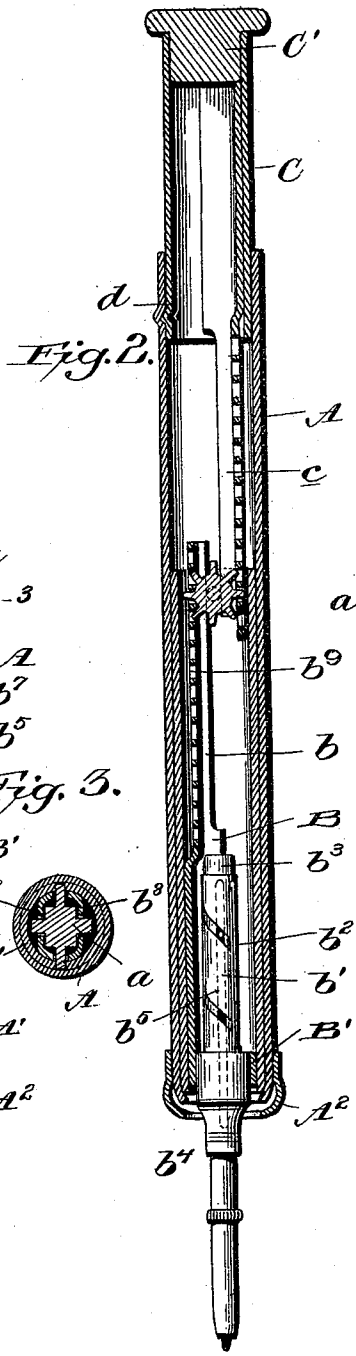
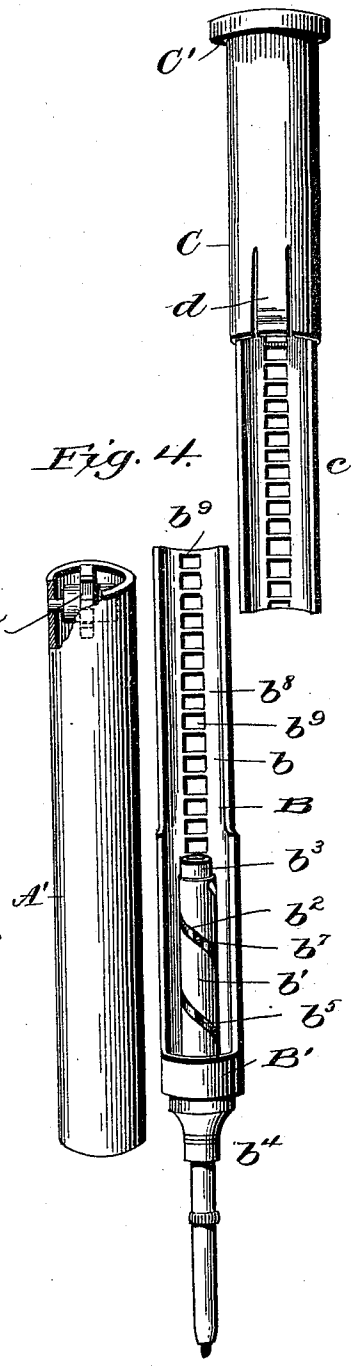


Fig. 3.

Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

CLAES W. BOMAN, OF NEW YORK, N. Y., ASSIGNOR TO THE EAGLE PENCIL COMPANY, OF SAME PLACE.

PEN AND PENCIL CASE.

SPECIFICATION forming part of Letters Patent No. 544,609, dated August 13, 1895.

Application filed March 29, 1895. Serial No. 543,612. (No model.)

To all whom it may concern:

Be it known that I, CLAES W. BOMAN, a citizen of the United States, and a resident of the city of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Pen and Pencil Cases, of which the following is a specification.

This invention relates to that class of pen and pencil cases having what is known in the trade as the "magic" movement. In such articles the case is an extensible one, and by pulling out the rear section of the case the front section carrying the lead or pen holder is caused to correspondingly project or protrude, and in like manner the pushing in of the rear section will cause the front or holder section to be similarly retracted.

The object of the invention is to simplify the construction and arrangement of the parts of the magic movement, whereby the article may be produced for less cost and sold at a lower figure than hitherto has been practicable.

The invention itself consists in a certain combination and arrangement of parts, which will first be described by reference to the accompanying drawings, forming part of this specification, and will then be more particularly pointed out in the claim.

In the drawings, Figure 1 is a longitudinal central section of a mechanical pencil embodying the invention in its preferred form with the parts in the position they occupy when the sections of the pencil-case are closed together. Fig. 2 is a like section with the parts in the position they occupy when the sections are drawn out and in extended condition. Fig. 3 is a cross-section on line 3 3, Fig. 1. Fig. 4 is a view of the three parts of the magic movement disassociated from one another.

The pencil is shown on an exaggerated scale in order to exhibit more clearly the construction. The movement is one in which a pinion journaled on an axis extending crosswise of the case or sheath engages two racks placed diametrically opposite each other on opposite sides of the pinion, the one attached to a sliding rear section and the other attached to a sliding front section, which carries the lead-holder, and the arrangement being such that when the rear section is moved in one direction the front section will be caused to move in the opposite direction. This feature, broadly considered, is not new. The structural details in which the invention resides will now be described.

A is the main portion of the sheath or case, which may be of any suitable material and of any ornamental pattern or configuration desired.

A′ is a sheet-metal open-ended tube which is intended to fit within and be a fixture in the sheath A. When in place, its front end jams up against the inwardly-swaged front end of the sheath and is held there by the clamping ring or sleeve A^2. At or near the rear end of the tube A′ is journaled upon a cross-pin the pinion *a*.

The front section B consists of a head B′, which fits the tube A′, this head having rigidly attached to it the rearwardly-extending tube *b*′, having in it a spiral slot b^2. Swiveled in the head and extending back through the tube *b*′ is the lead-holding tube b^3, terminating in a suitably-finished tip or nozzle b^4 and longitudinally slotted at b^5. The lead-follower b^6, contained in the lead-holding tube b^3, has a pin b^7, which projects through the slot in the latter tube into the spiral slot in the fixed outer tube *b*′.

By rotating the lead-holding tube the follower will be caused to move lengthwise in the tube, thus projecting or shoving back the lead, according to the direction of rotation.

To the head B′ is fixed a rearwardly-extending rack *b*, which is made of a sheet-metal strip curved crosswise to fit snugly against the inner wall of the tube A′, and along its longitudinal center depressed or flattened, as seen at b^8, Fig. 3. In this flattened portion are made the apertures b^9, by which the rack is formed. The teeth of the pinion *a* enter these apertures, and the portion b^8, in which this row of apertures is located, is flattened, so that it may be brought nearer to the pinion, and thus allow the teeth of the latter to more certainly engage the rack.

The rear section consists of a tube C, provided at its rear end with a suitable head C′,

and adapted to slide back and forth in the sheath A, in which it fits. To the front end of the section C is secured a sheet-metal rack *c*, of the same construction as the rack *b*. Rack *c* at its rear end fits within and is fastened to the tubular section C. At its front end it enters the tube A′, passing between the inner wall of that tube and the pinion on the side of the latter diametrically opposite to the other rack *b*. Similarly the rear end of the front rack *b* enters and is housed in the tubular rear section C when the pencil is closed, as seen in Fig. 1. A suitable detent is provided for preventing the rear section from being pulled out too far, this detent consisting, in the present instance, of a spring-detent *d* on the rear section C, which at the proper time enters a notch d^2 in the outer sheath *d*′.

The movement thus made is exceedingly cheap, easily manufactured and put together, and as a whole can be applied to and removed from the main or central sheath with the greatest ease. The two extensible parts are connected to the interior tube A′, this tube being practically of the same diameter as the rear tubular section C, and the two abutting or very nearly abutting when the pencil is closed, and the two racks telescope each into the other tube. When these parts are fitted together, they can as a whole be applied to and fitted in the main sheath A without further fastening than that which has been indicated.

What is claimed as new is—

The tubular central or main sheath A, in combination with the tube A′ fitting within and secured to the said sheath, and provided at or near its rear end with pinion *a;* the front section B provided with a head fitting the interior of tube A′, and a rearwardly extending sheet-metal rack *b* formed as described and engaging the pinion *a;* and the rear sliding tube C fitting the outer sheath A and having a forwardly projecting similar rack *c*, which also engages the pinion *a;* the two racks *b c* being formed and arranged to telescope each into the tube A′ or C, and the parts being constructed and arranged together for joint operation as herein shown and described.

In testimony whereof I have hereunto set my hand this 28th day of March, 1895.

C. W. BOMAN.

Witnesses:
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