A. T. CROSS.
Fountain-Pen.

No. 199,621. Patented Jan. 29, 1878.

Fig. 1.

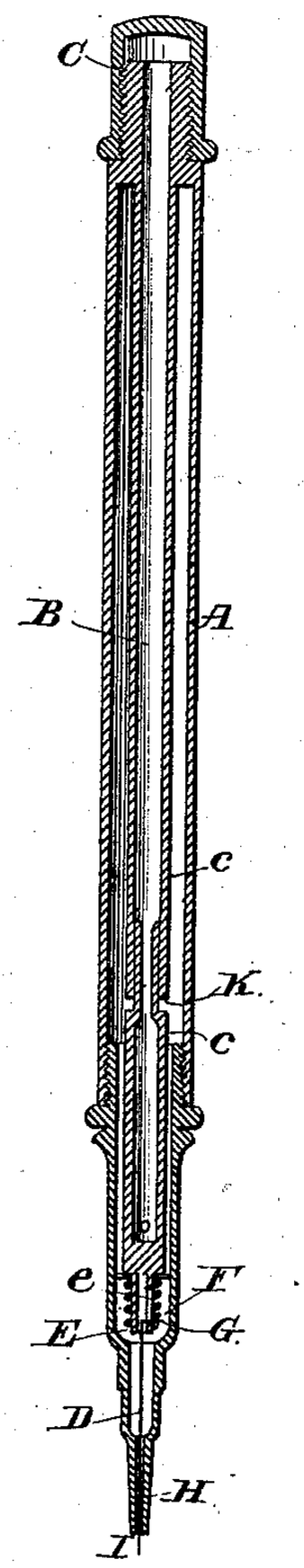
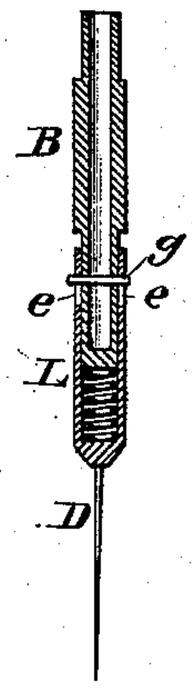


Fig. 2.



Attest

Socrates Scholfield

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UNITED STATES PATENT OFFICE.

ALONZO T. CROSS, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN FOUNTAIN-PENS.

Specification forming part of Letters Patent No. **199,621**, dated January 29, 1878; application filed December 3, 1877.

To all whom it may concern:

Be it known that I, ALONZO T. CROSS, of Providence, in the State of Rhode Island, have invented an Improvement in Fountain-Pens, of which the following is a specification:

My invention relates to that class of fountain-pens where a tubular writing-point and vibrating spindle are used in lieu of the ordinary writing-pen.

Figure 1 is a longitudinal section of a fountain-pen with my improvement.

In the drawing, A is the outer case; B, the air-tube; C, the vent-cap, and I the writing-point. The writing pin or spindle D is held loosely in the tube E, which is furnished with a slot, *e*, and upon the outside of which is placed the spiral spring F, which acts against the projecting head G of the pin D, to throw the pin downward. The writing-pin will, therefore, be caused to vibrate back and forth within the tube H when in the act of writing, thus keeping the orifice I clear for the uninterrupted flow of ink.

A joint, K, is made in the air-tube B, whereby the point of the pin D may be made to project more or less from the orifice I in the tube H. This joint may be formed by simply fitting the two pieces *c c* together, as shown, so that one may be inserted into the other to the required distance, and be held in place by friction; or they may be screw-threaded, for the purpose of more accurate and ready adjustment.

The spring F, instead of being placed on the outside of the tube E, may be placed inside of the tube L, (shown in the sectional Fig. 2,) passing loosely over the lower end of the air-tube B, the pin D being attached to the lower end of the tube L. The pin *g* passes through the tube B, and extends on either side into the slots *e e* in the tube L. An upward pressure upon the point of the pin D is resisted by the spring F, as in Fig. 1; the attachment of the pin D to the lower end of the air-tube B, so as to be operated by means of a spring, substantially as shown and described, being the gist of my improvement.

I claim as my invention—

1. The vibrating pin D and spring F, combined with an air-tube, B, case A, and tube H, substantially as described.

2. The pin D, projecting slightly from the tube H, and made capable of a vibrating endwise movement within the tube H and slotted tube E upon the lower end of an air-tube, B, by means of the spring F.

3. The pin D and spring F, in combination with an extensible joint, K, in the air-tube B, substantially as described.

ALONZO T. CROSS.

Witnesses:

SOCRATES SCHOLFIELD,

LE GRAND SCHOLFIELD.