(No Model.)

J. C. HARING.

Stylographic Fountain Pen.

No. 233,616. Patented Oct. 26, 1880.

Fig. 1.

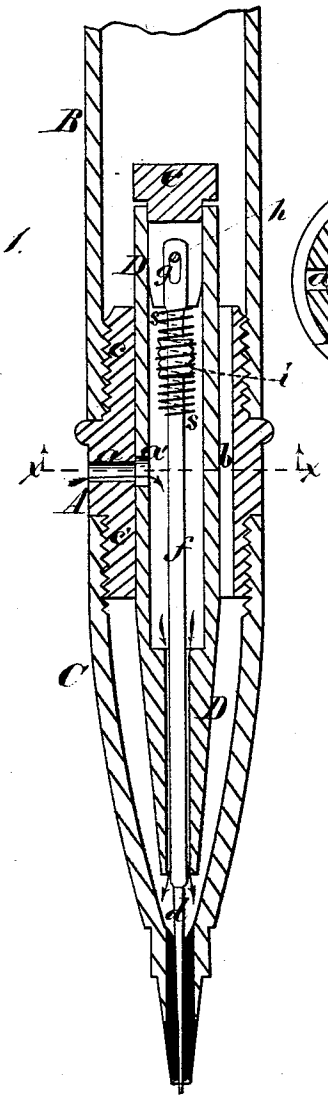


Fig. 2

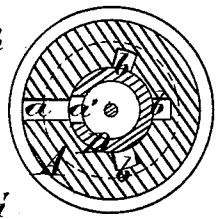
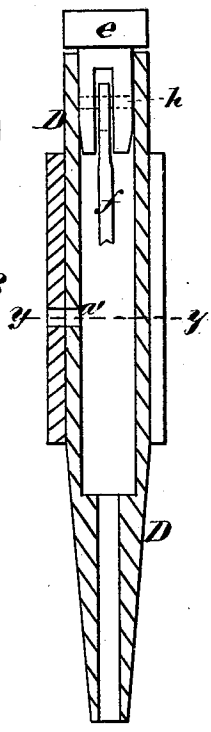


Fig. 4



Fig. 3



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN C. HARING, OF JERSEY CITY, NEW JERSEY.

STYLOGRAPHIC FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 233,616, dated October 26, 1880.

Application filed September 17, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. HARING, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and Improved Stylographic Fountain-Pen, of which the following is a specification.

My invention relates to stylographic fountain-pens in which an air-tube is arranged inside of a sectional pen-case and air is admitted into the tube through one side of the case and expelled into the ink-chamber for the purpose of causing ink to flow freely from the writing-point during the act of writing.

The objects of my invention are, first, to dispense with the short inlet-tube heretofore used for establishing an air communication between the outside of the pen-case and the internal air-tube, and to fit the air-tube tightly into a section of the pen-case and introduce air into this air-tube through holes made through the latter and through said section; second, to construct the case of a stylographic fountain-pen of three sections, the intermediate connecting-section of which is perforated at right angles to its length and interiorly grooved in the direction of its length, which latter section is adapted to have fitted into it and to hold in place an air-tube; third, to combine a needle and needle-spring adjuster with a non-extensible but axially-adjustable air-tube, which receives air through its side and through the side of the section of the pen-case into which the air-tube is fitted. I attain these objects by mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a diametrical section taken through my improved pen, highly magnified. Fig. 2 is a cross-section through Fig. 1 in the plane indicated by dotted line *x x*. Fig. 3 is an enlarged diametrical section through the air-tube, having a perforated and split collar applied on it. Fig. 4 is a cross-section through Fig. 3, taken in the plane indicated by dotted line *y y* thereon.

Similar letters refer to similar parts throughout the several views.

A designates a short tubular section of the pen-case, which is the intermediate connecting section of the barrel B and point-section C, as shown in Fig. 1. This section A, which is adapted to receive different styles of barrels and point-sections, is constructed with male screws *c c'*, a perforation, *a*, and with one or more grooves, *b*. The perforation *a* is at right angles to the longitudinal axis of the section A, and the groove *b* is formed in the interior of this section in a direction with the length thereof.

D designates an air-tube, to which is applied the needle *d* and its spring and a stopple or plug, *e*. This air-tube is of such a diameter that it will tightly fit into the screw-section A, as shown in Fig. 1, and when properly adjusted therein a hole, *a'*, registers with the hole *a*, and thus forms a conduit for admitting external air directly into the air-tube D, without the use of a tube separately formed for this purpose. The groove *b* forms a conduit for the ink to flow from the barrel B into the point-section.

It will be seen that the air-tube D is fitted in contact with the screw-section A, and that the admission of air into the air-tube is through the holes *a a'*. The air-tube is also, by this means, properly centered and firmly held in the pen-case or the section A thereof. The independent air-tube-holding section A admits the use of different kinds or styles of barrels and point-sections, as fancy may dictate.

In practice the hole *a'* through the air-tube may be made larger than the hole *a* through the screw-section A, for the purpose of facilitating the proper adjustment of the two holes *a a'* with respect to one another.

If desired, my construction will allow the inlet-conduit *a a'* to be regulated in size or entirely closed by simply adjusting tube D about its axis in section A.

If desired, a grooved enlargement may be formed on the air-tube D, or a grooved or split collar may be applied on the air-tube, which would render unnecessary making the bore of the screw-section A as small proportionally as shown in Fig. 1.

Figs. 3 and 4 show an enlargement on the air-tube, formed by the use of a longitudinally-split collar.

The air which is admitted into the air-tube D is expelled into the point-section C through the lower end of said tube, as shown in Fig. 1.

The needle *d* is fixed to a needle-rod, *f*,

which has an oblong slot, *g*, through its upper end, and through this hole passes a pin, *h*, that loosely attaches the needle-rod to the plug *e*, that closes the upper end of the air-tube D.

A screw-threaded collar, *i*, is rigidly fixed on the needle-rod *f* near its upper end, the threads of which collar receive the coils of a tension-spring, *s*, which bears upward against the lower end of the plug *e*. By turning the spring *s* about its screw-collar *i* the former can be more or less compressed above the collar, and thus the tension can be nicely adjusted.

I do not claim the hollow handle of a stylographic fountain-pen formed of the three sections A B C, as I am not the first inventor thereof; neither do I claim other features herein shown which are not specifically set forth as my invention.

What I claim as my invention is—

1. The screw-section A, perforated at *a* and grooved at *b*, in combination with the air-tube D, perforated at *a'*, substantially as described.

2. In a stylographic fountain-pen, the air-tube D, fitted tightly into the screw-section A, provided with the air-ducts *a a'* and ink-duct *b*, substantially as described.

3. The case for a stylographic fountain-pen, formed of the barrel B, point-section C, and an intermediate screw-section, A, perforated and grooved for the purpose described.

4. The needle-rod *f*, loosely connected to the plug *e*, in combination with the screw-collar *i* and spring *s*, substantially as described.

JOHN C. HARING.

Witnesses:
J. A. ROMEYN,
CORNELIUS C. HARING, Jr.