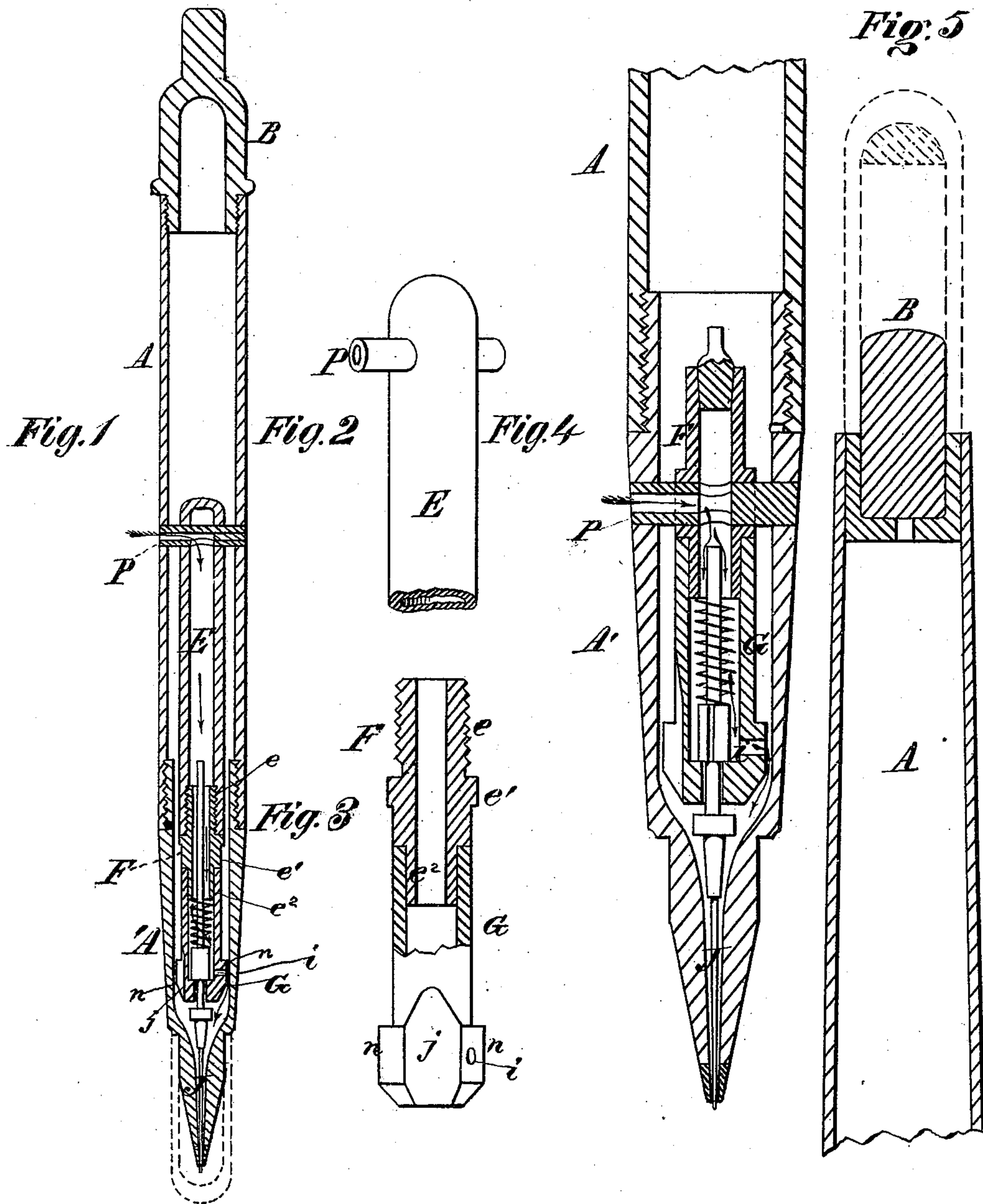


(No Model.)

C. H. & C. L. DOWNES.
Stylographic Fountain Pen.

No. 229,980.

Patented July 13, 1880.



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CHARLES H. DOWNES AND CHARLES L. DOWNES, OF JERSEY CITY, N. J.

STYLOGRAPHIC FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 229,980, dated July 13, 1880.

Application filed March 27, 1880. (No model.)

To all whom it may concern:

Be it known that we, CHARLES H. DOWNES and CHARLES L. DOWNES, both of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Stylographic Fountain-Pens; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference
10 being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 is an enlarged diametrical section through a stylographic fountain-pen having
15 our improvements applied to it. Figs. 2 and 3 show details of the air-tube highly magnified. Fig. 4 is an enlarged view of a point-section, showing a short air-tube with our transverse air-inlet applied to it. Fig. 5 is a section of
20 part of the handle of Fig. 4.

Similar letters of reference indicate corresponding parts.

This invention relates to stylographic fountain-pens having air-tubes combined with them
25 for admitting air to facilitate the flow of ink from the writing-points during the act of writing.

The nature of our invention consists, first, in a transverse or side air-inlet tube combined with the main or central air-tube in such
30 manner that, while air can be freely admitted into the ink-receptacle at or near the writing-point, a very large amount of space is afforded for containing ink, said tube extending entirely through the wall of the case and having
35 two end bearings therein, as will be hereinafter explained.

The invention consists, second, in combining with the upper or main tubular air-section and lower tubular needle-carrying section
40 a short independent removable coupling-section having a much smaller bore than either of its terminal sections, for the purpose of excluding ink from the same.

In the annexed drawings, A designates the case or hollow pen-handle, which is designed to serve as a reservoir for writing-fluid. B is a cap, which is secured in any suitable manner at the upper end of the handle A. A' designates the point-section, which is screwed into
50 the lower end of the handle A in the usual

well-known manner, and E designates the main portion of the air-tube, into which air is admitted through a transverse tube, P, hereinafter fully explained.

The main portion E of the air-tube has
55 screwed into its lower end a short tubular section, F, longitudinally through which is a bore very much smaller in diameter than the bore of the tube E, so that said section F forms
60 a check and prevents an upward flow of ink into the latter tube, E. The tube F is formed with a screw-threaded part, *e*, a collar, *e'*, and a neck, *e''*, which latter receives tightly the upper end of a tube, G, which serves as the
65 guide and receptacle for the stem of the needle J.

The tube G is held centrally in the section A' by means of flanges *n*, one or more of which is perforated at *i* to form outlets for air that
70 descends through tubes E, F, and G during the act of writing.

Between the flanges *n* scores or notches *j* are made to allow a free flow of ink to the writing-point. The small-bore tube F prevents
75 ink from working its way into the air-tube E.

The tube E communicates with the external air by means of the short transverse tube P, above referred to, which in Fig. 1 is represented as located between the upper end of the
80 handle A and the point-section A'.

In Fig. 4 the transverse tube P communicates with the external air through one side of the point-section A', and the air-tube is arranged wholly inside of this point-section
85 and detachable with it from the handle portion A. In this latter arrangement the entire space in portion A is left free for containing ink.

In Fig. 1 the air-tube occupies a part of the ink-space of the portion A, and this tube is
90 not detachable from the latter with the point-section.

We do not consider it necessary to close the transverse inlet P when the pen is not in use, although in the case of Fig. 1, where this tube
95 P passes through the side of handle portion A, a narrow slide might be used for closing said inlet.

Air escapes from the section G into the point-section through the aperture *i*, (shown in Figs. 100 1, 3, and 4.)

It will be seen that the short tube P is per-

forated transversely, so that when it is inserted through the wall of the case A and upper section of the air-tube it forms a communication between the interior of this air-tube and the external air. Tube P is below the upper closed end of the air-tube E, Fig. 1, and is the means for holding this latter tube in its place.

Having described our invention, we claim—

10 1. In a stylographic fountain-pen, the longitudinally and transversely perforated air-inlet tube P, supported at both its ends by the wall of the case A, and passed through the centrally-arranged air-tube, the latter being closed at its upper end, substantially as described.

15 2. In combination with the removable point-section A' of a stylographic fountain-pen and the centrally-arranged air and needle-carrying tube G, the longitudinally and transversely perforated air-inlet tube P, as described.

20 3. In a stylographic fountain-pen, the com-

bination, with an air-tube, E, which is hermetically closed at its extreme upper end, of a transversely and longitudinally perforated inlet-tube, P, and removable tubular sections F and G, arranged substantially as described. 25

4. The needle-carrying section G of a stylographic fountain pen, provided with the short small-bore coupling-tube F, detachable from said section, substantially as described, and formed of the threaded part *e*, enlargement *e'*, 30 and smooth part *e''*, as shown and specified.

Witness our hands in the matter of our application for Letters Patent for a stylographic fountain-pen.

CHARLES H. DOWNES.
CHAS. L. DOWNES.

Witnesses:

JOHN C. HARING,
GILBERT S. CLARK.