

(No Model.)

F. J. SEYBOLD.
STYLOGRAPHIC PEN.

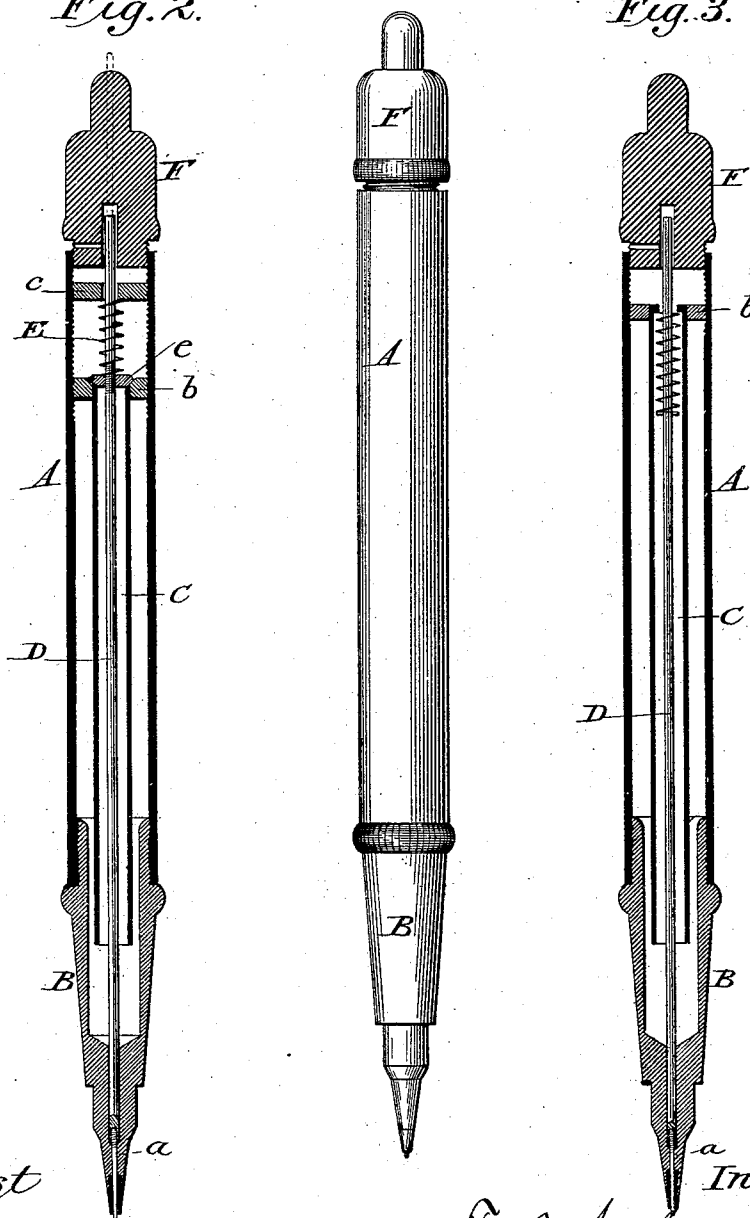
No. 272,161.

Patented Feb. 13, 1883.

Fig. 1.

Fig. 2.

Fig. 3.



Attest

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STYLOGRAPHIC PEN.

SPECIFICATION forming part of Letters Patent No. 272,161, dated February 13, 1883.

Application filed February 27, 1882. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK J. SEYBOLD, of New York, in the county of New York and State of New York, have invented certain Improvements in Fountain-Pens, of which the following is a specification.

This invention relates to that class of writing-instruments commonly denominated "stylographic pens," wherein a tubular ink-containing body or case is provided with a tubular point, through which the ink is discharged, and with a reciprocating stylus or needle mounted in said point and urged downward by a spring or its equivalent, so as to bear upon the paper when in action for the purpose of controlling and facilitating the discharge of the ink. Pens of this class, as ordinarily constructed, embrace, in addition to the features above named, a central air-tube or equivalent device extending within the body, to aid in controlling the delivery of the ink. In the practical use of the ordinary pen, however, two serious difficulties are encountered: first, that the small duct or passage through which the ink is discharged becomes obstructed by the thickening of the ink and the deposit of sediment or otherwise in such manner as to render the pen inoperative; and, second, that the springs employed, being exposed to the action of the ink, are continually clogged by deposits therefrom, being destroyed if made of any other metal than gold, and rendered exceedingly expensive in the latter case. It is to overcome these difficulties that my invention is particularly directed.

With this end in view the invention consists in the combination, with the outer case, of the stylus extending through or nearly through the case, the air-tube passing to the lower end of the ink-reservoir, near the point, and the spring placed out of the reach of the ink; also, in the combination, with the case, air-tube, and stylus, of a pull or retracting device at the upper end of the case, rigidly connected with the stylus or forming part of the stylus, and a spring placed out of reach of the ink. By means of the pull at the upper end of the stylus I am enabled to retract the stylus at will with a positive action, so that upon its being released it will be thrown forward

quickly by the spring. In practice it is found that by thus operating the stylus the ink-passage is readily opened or freed from obstructions and a proper flow of the ink insured in all cases, and this instantly and without detaching or disconnecting the operating parts of the pen.

Referring to the accompanying drawings, which represent my pen in its most approved form, Figure 1 is a side view of the pen. Fig. 2 is a vertical central section through the same; and Fig. 3 is a vertical central section through a modification.

A represents an ordinary cylindrical body or case, forming an ink-reservoir, provided at the lower end with the tapering point B, the latter having through its center a small hole or passage, *a*, through which the ink is discharged upon the paper.

C represents an air-admission tube attached to and opening through the top of the case, and extending thence downward centrally therein to the lower end.

D represents a reciprocating stylus or needle, extending through the point of the pen and thence upward through the body within the air-tube C, and protruding at the upper end in such manner that it may be grasped by the fingers of the operator. Near its upper end the stylus may be provided with a valve or collar, *e*, with or without a packing, which closes the upper end of the air-tube when the pen is not in use.

Near its upper end the case A is provided with a transverse diaphragm or partition, *b*, into which the air-tube passes, which closes the ink-reservoir at the upper end and serves as a seat for the valve *e*. The case is also provided above the diaphragm *b* with a second diaphragm or disk, *c*, screwed or otherwise secured in position, and perforated in the center to permit the passage of the stylus through it. Between the two diaphragms a spiral spring, E, is mounted, as represented in Fig. 2, bearing in its upper end beneath the diaphragm *c* and at the lower end upon the valve *e*, or upon a collar formed upon the stylus, the spring thus applied serving to urge the stylus downward and hold the valve *e* in a closed position.

When the pen is in use, the stylus, being urged upward by coming in contact with the paper, raises the valve and permits the air to enter freely. If at any time the ink-delivery passage becomes clogged or stopped, the writer has only to grasp the upper protruding end of the stylus between the thumb and finger, and after drawing the same upward release it, whereupon it will be thrown downward quickly and with a somewhat violent action, at once freeing the passage for the ink.

As a precautionary measure, and for the purpose of holding the valve in a closed position, when the pen is not in use, a cap, F, may be screwed into or upon the upper end of the case or body in such manner that when turned downward it will bear upon and hold down the stylus. When the pen is to be used the cap is screwed slightly upward, or detached, if preferred, leaving the stylus free to move.

It will of course be understood that the cap F is not a necessary feature, and that it may be omitted, if desired, in order to give access more readily to the upper end of the stylus, or, if preferred, the upper end of the stylus may be provided with a neck or extension extending through the cap to the outside, as represented in dotted lines in Fig. 2.

In order to admit the air past the cap F into the upper part of the body or case, the threads of the latter may be cut sufficiently free to admit the air past them when it is loosened, or air-holes may be made through the side of the case, or an air-channel may be formed in the outside of the cap.

It is manifest that the pull or retracting device at the top may be of any suitable form, and that it may be connected with the stylus by any suitable rigid connection.

The construction represented Fig. in 3 is essentially the same as that shown in the preceding figures, the only material difference being that the spiral spring is arranged within the upper end of the air-tube instead of above the same, thus avoiding the necessity of employing the upper disk or diaphragm. When the spring is thus mounted within the air-tube the lower end will act upon a pin or shoulder attached to the stylus or retracting device, while the upper end will bear beneath a shoulder or pin rigidly connected to the air tube or case.

It is manifest that in place of the spiral spring any other equivalent form of spring may be used in the combination specified.

Having thus described my invention, what I claim is—

1. In a stylographic pen, the combination, substantially as set forth, of the case, the stylus extending through or nearly through the case, the air-tube passing to the lower end of the ink-chamber near the point, and the spring placed out of the reach of the ink.

2. In a stylographic pen, the combination, substantially as set forth, of the case, the stylus, with a pull at the upper end of the case, the air-tube passing to the lower end of the ink-chamber at or near the point, and the spring placed out of the reach of the ink.

3. In a stylographic pen, the combination of the case, the air-tube, rigid through its entire length, and the stylus adapted to be retracted through the air-tube by a pull at the upper end of the case.

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Witnesses:

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