

(No Model.)

D. C. DEMAREST.
FOUNTAIN PEN.

No. 353,053.

Patented Nov. 23, 1886.

Fig. 1.

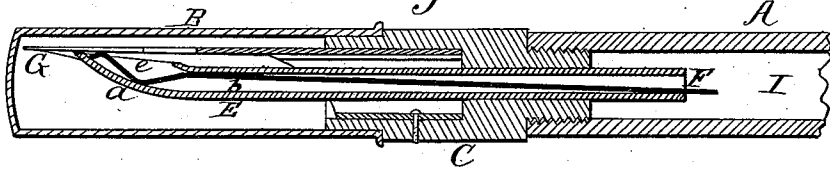


Fig. 2.

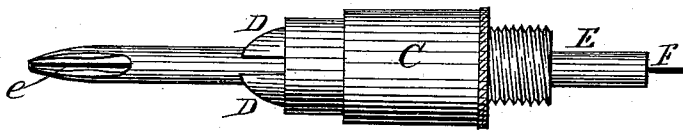


Fig. 3.

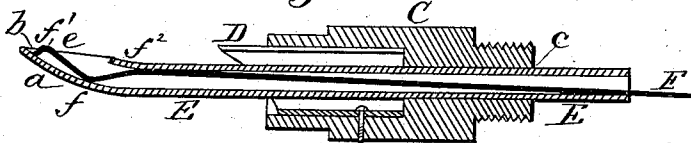


Fig. 4.

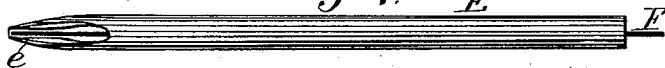
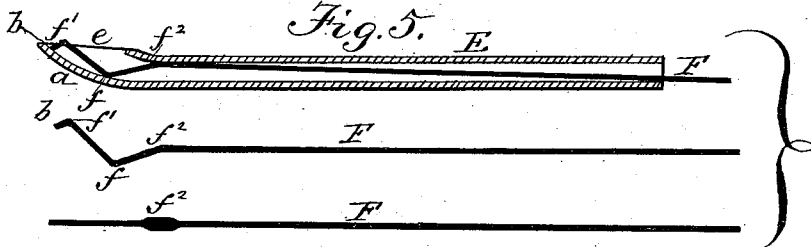


Fig. 5.



Witnesses:
R. E. Grant
W. B. Chaffee

Inventor:
D. Witt C. Demarest
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UNITED STATES PATENT OFFICE.

DEWITT C. DEMAREST, OF DENVER, COLORADO.

FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 353,053, dated November 23, 1886.

Application filed April 20, 1886. Serial No. 199,524. (No model.)

To all whom it may concern:

Be it known that I, DEWITT C. DEMAREST, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented new and useful Improvements in Fountain-Pens, of which the following is a specification.

I have improved the fountain-pen in which a small tube having a side opening delivers the ink to the pen from the reservoir, and in which the feed through said tube is effected by a strip of wood or similar absorbent material acting as a wick to convey the ink to the pen, while said tube has a separate air-vent. Such fountain-pens have also been provided with a feeding-pin arranged in the tube, so as to be reciprocated in the tube by the pressure upon the pen. As a feeder, I employ a spring-wire having one or more bends, so as to bear upon the tube at its open end and upon the walls of the tube back of its open end, whereby the air is caused to enter the handle-reservoir through the same opening through which the ink is caused to flow to the pen; and the wire is held in the tube by spring-contact at one or more points on the inner walls of said tube. The delivering end of the feeding-tube is curved, and its ink-delivering aperture is formed at its side, extending from the point back a short distance, and widens at the point, so that the side of the tube opposite the opening curves toward its open end.

My improvement gives a free outflow for the ink and a free inflow of the air at one and the same opening in the feeding-tube, because the spring of the wire holds it in place at the open end of the feeding-tube, while leaving a space under and at each side of the wire at the said delivery-opening, which the ink fills, and thus gives a free flow under the wire, while the air-vent is over the wire at the outlet for the ink. Moreover, an important advantage is gained by forming the end of wire so that its point will rest upon the point of the tube and stand just out of its opening, with a bend, so as to join or nearly touch the pen, which rests upon or is close to the point of the tube, and thus insures a ready flow of the ink at the point where it passes at once to the point of the pen.

The accompanying drawings show the wire-spring ink-feeder, in which Figure 1 is a longitudinal section of so much of a fountain-pen as illustrates the use of my spring-wire feeder in connection with the supply-reservoir and the pen. Fig. 2 shows the ink-feeding tube-holding section; and Fig. 3, a longitudinal section of the same, showing the spring-wire feeder. Fig. 4 shows the ink-feeding tube; and Fig. 5 is a section of the same, showing the spring-wire feeder therein and removed therefrom.

The handle A is hollow, forms the ink-supplying reservoir for the pen, and screws upon the section C, which holds the ink-feeding tube and the pen. The section C has the usual pen-clamps, D, and the feeding-tube E is secured in a central opening, *c*, therein, so as to project therefrom at both ends. A cap, B, covers the pen-holding end of the section C when the pen is not in use. The case-forming parts of the pen and the feeding-tube are of hard rubber, and they may be made as shown, or in any suitable way, as my improvement lies in the feeding-tube having the spring-wire feeder.

The feeding-tube E is of hard rubber, is open at both ends, is fitted tightly within the pen-holding section C, projects therefrom at one end into the supply-reservoir, and has a side opening, *e*, at its other end of an oblong form, so that its side, *a*, opposite this opening is curved upward toward the pen, to cause the ink to flow to the side opening from the tube directly upon the pen G, which projects beyond the end of the tube close to or nearly touching it.

The wire feeder F is a slender strand of non-absorbent material—such as silver, platinum, or other non-absorbent material—of sufficient elasticity to permit of the formation of bends therein and the curving of it to form one or more bearings upon the walls of the tube at its open end. Its spring function holds it in place in the tube at the point of adjustment, and in its feeding function conducts the ink from the reservoir I direct to the point of the tube, and holds it at its curved end upon the pen. For this purpose I prefer to form the wire feeder with a point-bend, *b*, so as to form a bearing upon the inner curved wall just at the

open point of the tube, and a bend, f' , just back of the bearing-point, touching or nearly in contact with the pen, holding the ink-supply just at the point of the latter without obstructing its flow to such point, and giving a free entrance for the air into the opening e , so that the air will follow the wire in bubbles into the reservoir I.

The binding or holding of the wire feeder in its proper adjustment in the tube is by one or more bends, $f f^2$, which form bearings on the inner opposite sides of the walls of the tube, preferably, as shown, at or near the open end of the tube. At the point f^2 the bend in the wire may be flattened so as to form a flat surface-bearing, to prevent the turning of the wire from its proper position and to facilitate its adjustment in the tube. These bearing-bends need only be such as to give the requisite holding function at one or more points, so that the wire will offer the least obstruction to the flow of the ink, and, indeed, the inner end of the wire may extend centrally in the tube from its holding-points. This construction gives a central feeder for the ink direct to the point of the pen, and an inflow of the air into the reservoir at an opening for both, having a feeding strand of non-absorbent material so formed as to keep plenty of ink on the pen, preventing its too free flow and allowing the ink to run back into the reservoir when the pen is not in use.

The wire feeder can be moved or turned to free any clogging or gumming; but its liability to gum or clog is greatly lessened by reason of the feeder having only a point-bearing, b , just at the open side at the end of the feeding-tube, and a point, f' , extending into the opening away from the wall of the tube, and close to or touching the pen. It is this special relation of the bearing-points and form of the wire feeder that I have found to give a satis-

factory use of the pen in the flow of the ink and the freedom of the pen from clogging. The feeding-tube is made adjustable within the pen-holding section, so as to allow pens of different lengths to be used.

The feeding-tube having a side opening at its delivering end for the outflow of the ink to the pen and a separate opening for the inflow of the air has been used with an interior feeding-strip of wood, dividing the said tube into two separate passages, which are liable to become clogged and to prevent the free flow of the ink. Such feeding-tubes have also been provided with a central feeding-pin seated in the wall of the tube at its open end, and I do not claim such constructions.

I claim—

1. In a fountain-pen, the wire feeder F , formed at its outer end with the angular bends $f f' f^2$, in combination with the tube E , having the opening e , the said wire feeder being wholly inclosed by said tube and its bends forming retaining bearings upon the walls of the tube at its open end, leaving the tube unobstructed throughout its length for the outflow of the ink and the inflow of the air, as shown and described.

2. In a fountain-pen, the combination of the feeding-tube, having the opening e , with the feeder F , of round wire, extending through said tube into the reservoir, its other end having the angular bearing-bends $f f' f^2$, the latter bearing being flattened, and the bend f' standing within the open end of said tube, as shown, and for the purpose stated.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

DEWITT C. DEMAREST.

Witnesses: -

AUSTIN W. SMITH,
WILLIAM B. PALMER.