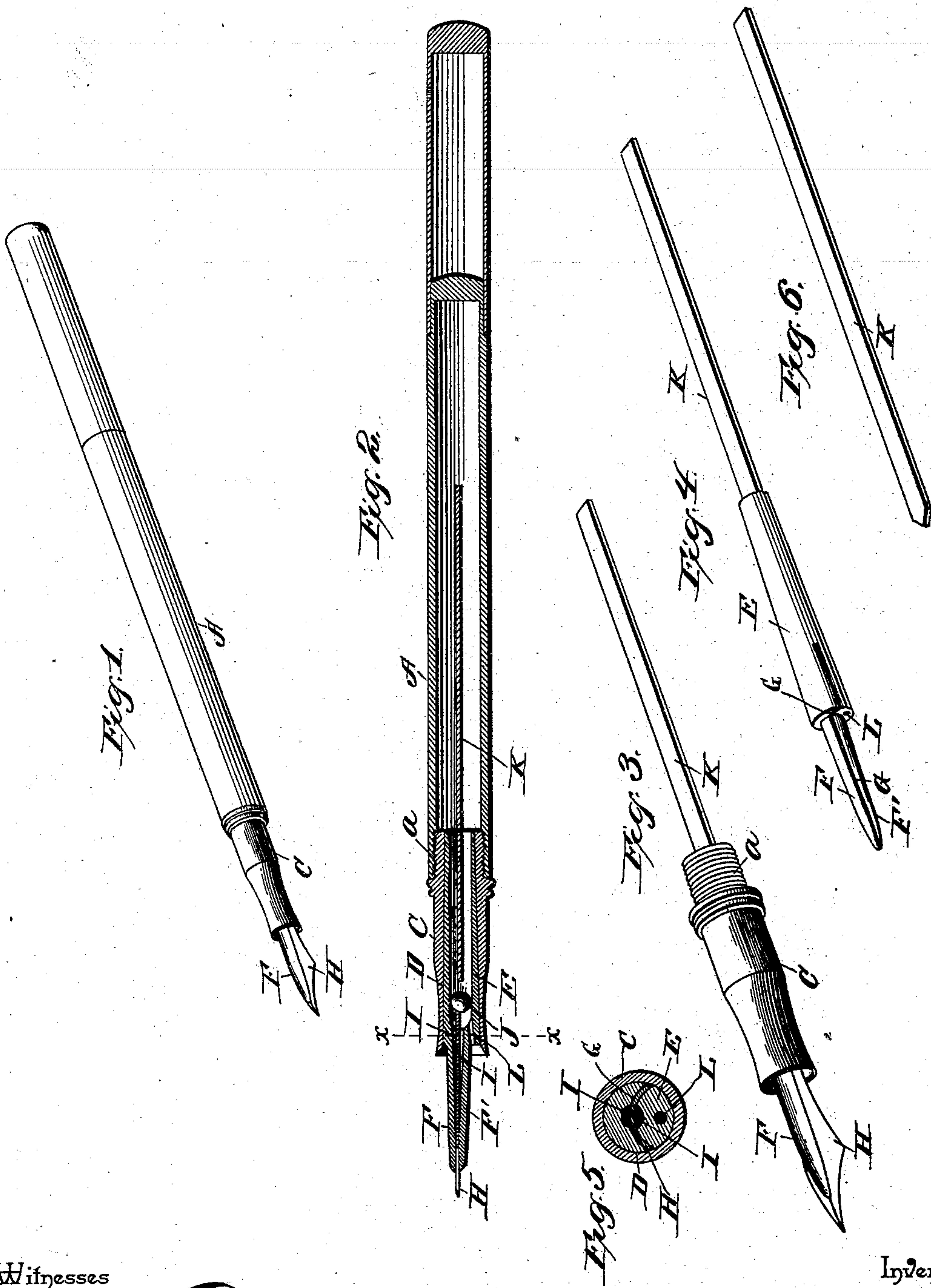


(No Model.)

M. M. FENNER.
FOUNTAIN PEN.

No. 503,763.

Patented Aug. 22, 1893.



Witnesses

E. C. Mordeman.
D. P. Mochaupt.

By *his* Attorneys,

Inventor

Marvin M. Fenner

Chas. Snow & Co.

UNITED STATES PATENT OFFICE.

MARVIN M. FENNER, OF WAUPUN, WISCONSIN, ASSIGNOR OF ONE-HALF
TO JAMES B. SHEA, OF SAME PLACE.

FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 503,763, dated August 22, 1893.

Application filed February 24, 1893. Serial No. 463,554. (No model.)

To all whom it may concern:

Be it known that I, MARVIN M. FENNER, a citizen of the United States, residing at Waupun, in the county of Dodge and State of Wisconsin, have invented a new and useful Fountain-Pen, of which the following is a specification.

This invention relates to fountain pens; and it has for its object to provide certain improvements in pens of this character, to secure efficient means whereby the flow of the ink shall be accurately regulated, while at the same time overflow and other disadvantages of and objections to ordinary fountain pens will be avoided.

To this end the main and primary object of the invention is to provide improved feeding and penholding devices.

With these and many other objects in view which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a perspective view of a fountain pen constructed in accordance with my invention. Fig. 2 is a central longitudinal sectional view of the pen enlarged. Fig. 3 is an enlarged detail in perspective of the feed plug with the detachable nozzle. Fig. 4 is a similar view of the feed plug with the pen removed, and separated from the nozzle. Fig. 5 is an enlarged transverse sectional view on the line $x-x$ of Fig. 2. Fig. 6 is a detail in perspective of the independent auxiliary feed conductor or reed.

Referring to the accompanying drawings, A designates the main part or barrel of the pen, which, as is usual in fountain pens, is made hollow and forms the ink receptacle or reservoir. The barrel A, is interiorly threaded at its open end as at a , to detachably receive the threaded end of the detachable nozzle C. The detachable nozzle C, has an interiorly tapered bore D, which is adapted to receive the exteriorly tapered cylindrical feed-plug E, which is adapted to have a wedging fit inside of the detachable nozzle C, so as to

form an ink-tight joint, while at the same time being capable of separation from the nozzle with slight force. The cylindrical feed-plug E, is open at its inner end communicating with the interior of the ink reservoir or barrel A, while from the other end thereof extend the reduced upper and lower feed tongues F and F', respectively. The upper and lower feed tongues F and F', are separated from each other and are formed by the longitudinal combined feed and pen-point slit G. The slit G, extends from between the outer extremities of the feed tongues F, and F', a sufficient distance into the closed ends of the feed plug, so as to accommodate nearly the entire length of the pen point H, which is adapted to be inserted into said slit between said feed tongues. The tongues embrace the upper and lower sides of the pen point and extend near to the writing extremity of such point, so as to not only firmly hold the pen point in position, but also to insure a double feed of ink thereto from the top and bottom sides thereof. As clearly shown in the drawings, the slit G, is curved so as to correspond to the curvature of the pen point which snugly registers in the slit. The inner faces of the upper and lower equal length feed tongues F and F', which contact with the upper and lower sides of the pen point, and a portion of the feed plug itself which embraces the pen point, are provided with the longitudinally disposed ink grooves or channels I, which serve as capillary passages for the feed of the ink from the main part of the feed-plug to the upper and lower sides of the pen point, as will be readily apparent. By reason of having the upper and lower feed for the pen point, the amount of ink required for writing can be accurately regulated, the amount or quantity of ink flowing, depending upon the pressure on the pen point, so that the operator can make a heavy or light stroke at his option, it being apparent that with the double feed he can make a heavier stroke than could be made with a pen having a single feed, owing to the fact that more ink can be supplied quicker to the point.

In order to secure the proper regulation

and feed of the ink to the upper and lower portions of the pen point, I employ a regulating ball-valve J. The said ball valve J, is arranged inside of the cylindrical feed plug, E, and is slightly smaller in diameter than the same so as to rest on top of the inner end of the pen point. The said ball valve, by resting on the inner end of the pen point, keeps the pressure, due to the weight of the ink in the barrel or reservoir, off of the pen, but when the pen is in use, its motion gives motion to the ball, so as to work the ink by the same, and to feed the pen point as quickly or as slowly as the rapidity of pressure of the writing requires. The ball valve steadies the flow of ink irrespective of the amount of ink in the barrel.

To provide for the auxiliary feeding of the ink from the barrel into the feed plug and vice versa, I employ a separate and independent flat conductor reed K. The flat conductor reed K, is of a width allowing its wedging insertion into the inner open end of the feed plug, and is adapted to extend therein, to a point near to the ball valve, while extending up into the barrel or reservoir nearly the entire length thereof. The reed K, serves to conduct the ink from the pen point back into the barrel, without forming bubbles in the inner end of the feed plug, while at the same time also serving, in connection with the ball valve, to conduct the ink from the barrel into the upper and lower feed portions of the feed plug.

Below the slit G, in the feed plug and in the closed end thereof directly under the lower feed tongue F', is formed a vent opening L, which allows the air to escape without forcing the ink over the tip of the pen, when the pen is turned writing end up in placing in the pocket and when not in use. The vent also gives free and steady flow of the ink when the pen is in use. Inasmuch as the ink is used and distributed to the upper and lower portions of the pen point, air can easily take the place of the discharged ink, by entering the vent without having to force its way through the ink channels and past the ink.

From the foregoing it is thought that the construction, operation and many advantages of the herein described fountain pen will be apparent to those skilled in the art, and I will have it understood that changes in the form, proportion, and the minor details of construction as embraced within the scope of the appended claims may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a fountain pen, the combination with the ink reservoir, of the detachable nozzle having an interiorly tapered bore, an exteriorly tapered cylindrical feed plug adapted to be wedged into the interiorly tapered bore

of the nozzle and provided with a pen slit, the pen point, an independent conductor reed adapted to be inserted into the inner open end of the feed plug and project into the ink reservoir, the said reed having its inner end adjacent to but out of contact with the inner end of the pen point, and an ink regulating ball valve arranged to work inside of the feed plug over the inner end of the pen point projecting therein, substantially as set forth.

2. In a fountain pen, the combination with the ink reservoir or barrel, of the interiorly tapered detachable nozzle fitted thereto, an exteriorly tapered hollow feed plug adapted to be wedged into said nozzle and provided with a longitudinally disposed slit extended in from one end thereof, upper and lower feed tongues adapted to embrace both sides of a pen point, and a separate and independent conductor reed adapted to be inserted into the inner end of the feed plug and to project into the ink reservoir or barrel, substantially as set forth.

3. In a fountain pen, the ink reservoir or barrel, the nozzle at one end of said reservoir or barrel, the separate removable hollow feed plug open at its inner end and having upper and lower feed tongues extended from its opposite end and a curved slit extending between the feed tongues and into the closed end of the feed plug to accommodate the pen point, longitudinally disposed ink grooves or channels formed in opposite faces of said tongues above and below the pen point, and a ball valve arranged to work inside of the feed plug over the inner end of the pen point projecting therein, substantially as set forth.

4. The combination of a feed plug for use in fountain pens, consisting of a hollow cylindrical body open at one end and having a combined feed and pen point slit formed in its opposite end, the pen point adapted to be inserted in said slit, and an ink regulating ball valve adapted to work inside of said feed plug on top of the inner end of the pen point projecting therein,—substantially as set forth.

5. In a fountain pen, the ink reservoir or barrel, the nozzle at one end of said reservoir or barrel, the separate hollow feed plug open at its inner end and having reduced upper and lower feed tongues extended from its opposite end, a slit extending between the feed tongues and into the closed end of the feed plug to accommodate the pen point, longitudinally disposed ink grooves or channels formed in opposite faces of said tongues, and an air vent formed in the closed end thereof directly under the lower feed tongue, a separate and independent conductor reed inserted in the inner end of the feed plug, and a ball valve arranged to work inside of the feed plug between the pen point and said conductor reed, substantially as set forth.

6. The combination of a feed plug for use in fountain pens, consisting of a hollow cylindrical body having extended feed tongues,

longitudinally disposed ink grooves or channels formed in opposite faces of each of said tongues, and the pen point slit intersecting the tongue, and an ink regulating ball arranged inside of the plug, substantially as set forth.

In testimony that I claim the foregoing as

my own I have hereto affixed my signature in the presence of two witnesses.

MARVIN M. FENNER.

Witnesses:

JOHN C. GEBHART,
J. W. OLIVER.

Correction in Letters Patent No. 503,763.

It is hereby certified that the name of the assignee in Letters Patent No. 503,763, granted August 22, 1893, upon the application of Marvin M. Fenner, of Waupun Wisconsin, for an improvement in "Fountain Pens," was erroneously written and printed "James B. Shea," whereas said name should have been written and printed *James P. Shea*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 19th day of September, A. D. 1893.

[SEAL.]

JNO. M. REYNOLDS,
Assistant Secretary of the Interior.

Countersigned:

S. T. FISHER,
Acting Commissioner of Patents.