(No Model.)

C. W. TAYLOR.

FOUNTAIN PEN.

No. 346,330. Patented July 27, 1886.

Fig. 1.

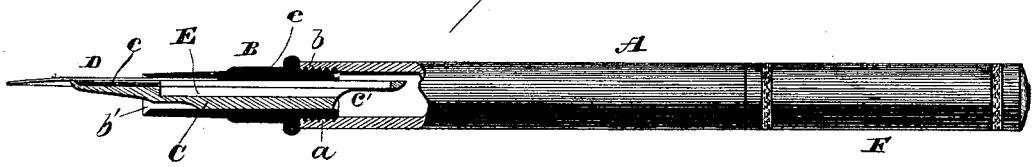


Fig. 2.

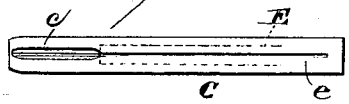
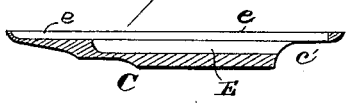


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

CLARENCE WALLACE TAYLOR, OF JANESVILLE, WISCONSIN.

FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 346,330, dated July 27, 1886.

Application filed May 6, 1886. Serial No. 201,364. (No model.)

To all whom it may concern:

Be it known that I, CLARENCE WALLACE TAYLOR, of Janesville, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Fountain-Pens; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in fountain-pens.

On the 20th of April, 1886, Letters Patent No. 340,166 were granted me for an improvement in fountain-pens. In that patent an ink-conduit was shown and claimed, communicating with the ink-reservoior and a well beneath the pen, and provided with superposed channels for conducting the ink from the reservoir by capillary action and separating the sediment therefrom. While this construction has proven effective to a fair degree it has been found somewhat deficient in respect to the opening in the end of the conduit beneath the pen through which the air was required to pass into the reservoir as the ink passed out, and which, while being large enough to admit too much air under certain favorable circumstances—as, for example, when the pen was first inverted point downward, and in good working condition—was so small as to be liable to become clogged by any small bit of sediment, which might chance to work its way therein. Furthermore, the superposed channels served to facilitate the flow of ink only, rather than furnish an unlimited supply for full and rapid writing. The heat from the hand has also had a tendency to expand the air within the holder and force the ink too freely out of the opening beneath the pen.

The object of my present invention is to provide a pen in which the flow of ink to the pen shall be regular and constant, and the supply immediately beneath the pen sufficient for any emergency of full or rapid writing.

A further object is to provide a pen in which the feed will not be liable to become clogged by sediment, and in which the ink shall be effectually separated from the sediment, and which will admit of the use of pens of ordinary construction in connection therewith.

A further object is to provide a simple effective and economical fountain-pen adapted to universal use.

With these ends in view my invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view of the pen and holder in longitudinal section. Fig. 2 is a detached sectional view of the removable plug, and Fig. 3 is a modified construction of the same.

A represents the barrel of the holder, the interior chamber of which forms the ink-reservoir. The lower end of the barrel is open and provided with a female-thread, *a*, in which the threaded end *b* of the tube B is adapted to work. The tube B is provided with an undercut edge, *b'*, to prevent the ink from getting onto the fingers of the writer.

C represents the feed-plug. It is sufficiently long to extend from a point beneath the nibs of the pen through the tube B into the ink-reservoir. It is adapted to fit snugly within the tube B, and is provided beneath the pen D with an elongated shallow recess, *c*, adapted to hold a supply of ink in immediate contact with the pen throughout a considerable portion of its length. A duct or channel, E, is located nearly centerally within the plug and extends from the reservoir end of the same to a point beneath the upper end of the recess *c*. The reservoir end of the plug C is cut away on its under side, as shown at *c'*, and at its opposite end is cut away to form a neat finish and to save weight. From a point near the extreme upper or reservoir end of the plug to the lower end of the recess *c*, a narrow capillary slit, *e*, is formed extending completely through from the duct or channel E to the outside of the plug forming a continuous and extended capillary feed, adapted to supply ink taken from the reservoir or from the channel E, or from both, directly to the pen. The slit or capillary channel *e* is so narrow that particles of sediment are not liable to enter between its walls, and it has such an extended opening into the reservoir and into the feed-recess beneath the pen that any

partial stoppage of the communication between the duct or channel E, and the opening leading thereform to the pen, will have no appreciable effect upon the supply.

The insertion of a gold pen, D, within the end of the tube B will require that it be more or less sprung, if of ordinary size, and this will have a tendency to crowd the pen into snug contact with the extreme lower end of the plug C, and by such contact will tend to press the end of the plug slightly downward, so that as the pen is pressed upon the paper, as in writing, the end of the plug will follow its vibratory movements and prevent an abnormal flow of ink onto the point. The point of the pen, when so sprung, will be thrown into the line of the axis of the holder or of the plug C, and will be as easily manipulated as a pencil.

The plug C may be made longer or shorter than represented in the drawings. It may extend well into the barrel or may stop short of it within the tube B, and the capillary channel *e* may be made wider or narrower to use thicker or thinner ink and to supply greater or lesser quantity of ink, as the case may require. For example, if a penman is writing a heavy hand and rapidly, he would naturally require a free and rapid flow of ink and the capillary channel would be made wider, while in writing a fine hand either slowly or rapidly the quantity of ink required would be much less, and the channel might be narrowed accordingly. It would be quite practical to provide two or more plugs C to accompany each pen sold, to be adjusted to suit the kind of ink used and as the style of writing was to be changed. The supply of ink in the feeder-recess *c* is quite sufficient to supply the demand which may be made for any reasonable length of time upon it in shading or flourishing even when the narrower capillary channel *e* is employed.

The modified form of plug shown in Fig. 3 has the broadened feeder-recess *c* omitted, the capillary channel *e* extending to the lower end, as before, and opening into immediate contact with the lower side of the pen.

The cap F, which fits over the end of the tube B when the pen is not in use, is adapted to fit over the upper end of the barrel when in use, as usual.

The vibratory movement of the pen, because of the capillary feeder being in direct communication therewith, will tend to facilitate the flow of ink to the pen, since it will form a "suction," as it is commonly called, every time the pen is pressed upon the paper by the clinging of the ink in the recess *c* to the under surface of the pen. This becomes an important feature in practice, as it tends to accelerate the flow of ink along with the increase in speed in writing.

The pen, as above constructed, furnishes a certain, regular, and sufficient flow of ink, and is simple and neat.

It is evident that slight changes might be resorted to in the form and arrangement of its parts without departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to the construction herein set forth; but,

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

1. The combination, with a reservoir pen-holder and a pen, of a plug located in the end of the holder and provided with a feeder-recess extending beneath a portion of the pen, and a capillary slit or channel leading directly from the lower end of the recess along the under side of the pen to the reservoir, substantially as set forth.

2. The combination, with a reservoir pen-holder and a pen, of a plug located in the end of the holder and provided with an elongated feeder-recess directly beneath the pen, an ink-conduit leading from the reservoir to a point beneath the feeder-recess, and a capillary slit or channel connecting the feeder-recess, reservoir, and ink conduit, substantially as set forth.

3. The combination, with the pen-holder and the pen, of an adjustable plug located in the end of the holder and provided with an ink-conduit extending from a point beneath the pen to the ink-reservoir, and with a capillary slit or channel extending from a point below the center of the pen along underneath the pen to its upper end, and thence into the ink-reservoir in the holder, substantially as set forth.

4. In a fountain-pen, a plug adjustably secured in the end of a reservoir-holder and provided with a capillary channel extending nearly its entire length, the said channel being open to the outer surface of the plug, and a feeder recess, the latter being located at the outer end of the plug, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CLARENCE WALLACE TAYLOR.

Witnesses:

A. C. MARIS,

C. S. JACKMAN.