

No. 625,722.

Patented May 23, 1899.

W. I. FERRIS.
FOUNTAIN PEN.

(Application filed Aug. 24, 1898.)

(No Model.)

Fig. 1.

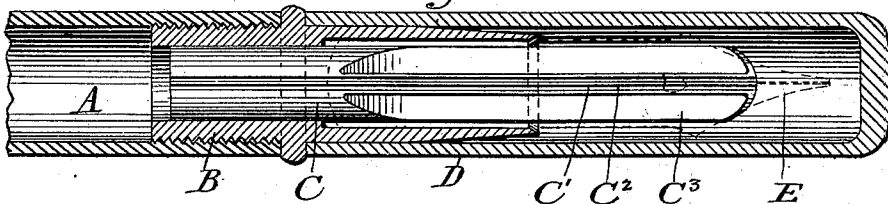


Fig. 2. y

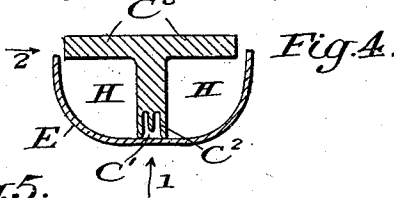
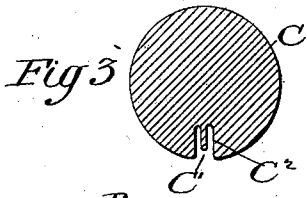
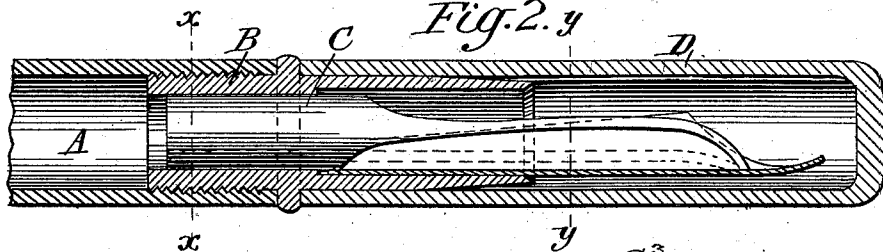


Fig. 5.

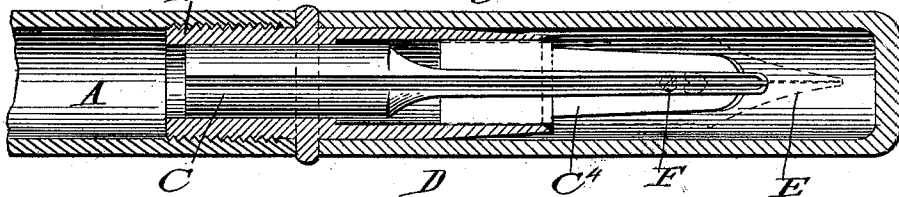


Fig. 6.

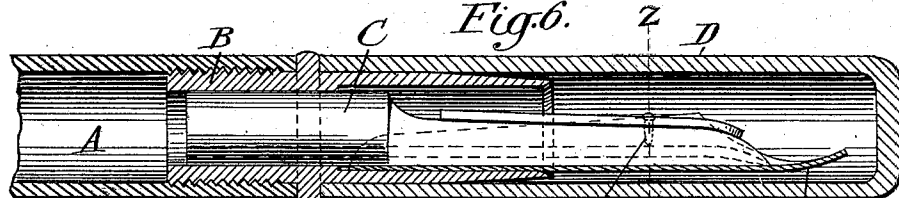


Fig. 8.

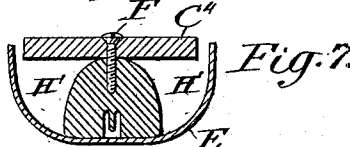
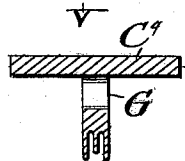


Fig. 9.



Witnesses:

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UNITED STATES PATENT OFFICE.

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FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 625,722, dated May 23, 1899.

Application filed August 24, 1898. Serial No. 689,422. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM I. FERRIS, a citizen of the United States, residing in the city of Stamford, county of Fairfield, and State of Connecticut, have invented a new and useful Improvement in Fountain-Pens, of which the following, taken with the accompanying drawings, is a specification.

My invention relates to that part of a fountain-pen situated between the reservoir and the nibs and to the operation of feeding the ink to the nibs and restraining any surplus which goes on therein.

The particular object of my invention relates to the latter part thereof—viz., to prevent the ink being forced to the point faster than needed or, as frequently happens, collecting there and dropping off.

As fountain-pens have been heretofore constructed, even where the feed has been perfectly arranged, so as to conduct just the right quantity of ink to the pen and maintain at all times the "wet-line" from the nibs to the reservoir, nevertheless a slight expansion of the air in the reservoir or a jar will force some ink down to the nibs, which, even if not enough to cause a blot, makes a disagreeable thick mark until the overflow is exhausted. If the reservoir is partly empty, the heat of the hand expanding the air exaggerates this difficulty, so that at times three or four drops are forced off the point of the pen, causing blots.

My invention in general consists in providing one or more overflow-pockets which under all ordinary circumstances will remain empty and form no part of the regular feed, but so situated with reference to the feeding device that any extra quantity of ink beyond the regular feed coming down from the reservoir through any cause flows naturally into them and is held there without collecting around the point. This allows the pen to make its natural stroke at all times. At the same time the overflow-pockets are so situated with reference to the nibs that when the pockets have received an overflow and are full the nibs will draw their supply first from such overflow-pockets, which empties them, so that they are ready for the next emergency.

My device is not a method of controlling or regulating the flow of ink, but merely of providing any pen having a regulated flow with

a place into which three or four drops of surplus ink forced out by unusual circumstances may go instead of being forced to the point, where it will cause a blot. It therefore forms no part of the ordinary feed, and must be out of the regular line of conduction from the reservoir. At the same time some means must be provided for emptying the pocket when it has once been filled or it will not be available for a second emergency. This double purpose I accomplish by making the overflow-pockets adjacent to the pen itself, but not directly at the point, but at the same time in capillary communication with the slit of the pen.

The accompanying drawings show the invention adapted to a fountain-pen in which the feeding device consists of a rubber bar wedged into the lower end of the holder by the side of the gold pen and containing a feed-duct and fissures through which the ink is fed from the reservoir to the pen chiefly by capillary attraction.

In the accompanying drawings, Figure 1 is a longitudinal view, partly sectional, of the invention with all the parts in position, looking in the direction of the arrow No. 1 of Fig. 4. Fig. 2 is a similar longitudinal view, but looking in the direction of the arrow No. 2 of Fig. 4. Fig. 3 is a section of the feed-bar on the line *xx* of Fig. 2. Fig. 4 is a section of the feed-bar and pen on the line *yy* of Fig. 2. Figs. 5, 6, and 7 are upon the same planes as Figs. 1, 2, and 4, respectively, showing a modification, Fig. 7 being on the line *zz* of Fig. 6. Fig. 8 is a longitudinal view of the feed-bar, and Fig. 9 a transverse section of same on line *vv*.

A is the reservoir, united by screw-thread or in some other permanent way with B, which is the pen-section, into which the pen and feed-bar are wedged.

C is the feed-bar.

D is the cap inclosing the parts when not in use.

E is the metallic pen.

In the form shown in the drawings the feed-duct consists of a longitudinal groove *C'*, cut in the surface of the feed-bar C from the reservoir to the pen-point and such groove being in contact with the under surface of the pen E down to the slit in the nibs.

*C*² are minute fissures cut in the feed-bar C and extending beyond the groove, the feed of

ink being ordinarily through such fissures. The feed-bar C for a certain distance from the reservoir entirely fills the pen-section except for the groove C' and the fissures C²; but beyond that point the feed-bar as ordinarily made consists of only a slender piece sufficiently large to hold the groove; but with my invention (see Fig. 4) the feed-bar is made higher and with transverse pieces C³ connected therewith, extending from the top of the bar to the sides of the metallic pen. The effect of this is to form on each side of the feed-bar C with the curving sides of the metallic pen E two overflow-pockets H, Fig. 4. These pockets are in communication with the reservoir A through the grooves C', since the feed-bar C, while touching the pen E, does not fit so tight as to prevent ink being forced between them. They (the pockets) are also removed from the writing-point, Figs. 1 and 2, but are in communication therewith through the slit of the pen E.

The operation is as follows: In the ordinary use of the pen the ink feeds through the fissures C² and the overflow-pockets H and the groove C' are practically empty; but if the reservoir A is nearly exhausted the expansion of the air therein forces the ink down through the groove C', fills it, and, if there is no other place for it to go, forces it off the point of the pen, sometimes as much as three or four drops; but with my invention the ink is not forced off the point of the pen, but instead is forced between the surface of the pen E and the feed-bar C into the overflow-pockets H. The reason why it is forced into these pockets sidewise rather than off the point of the pen is that the pressure is less in that direction, and that is the principle of my invention. The pockets H are in this form substantially triangular, which greatly aids the retention of the ink, though I do not mean to confine myself to that shape. Their size is an important element. They should be made capable of containing three or four drops, not more. That is sufficient to take up all that would be forced out, and if made larger they would not retain as much, as the attraction of a larger space is not as great, but some ink would escape to the point of the pen. The overflow-pockets to perform their function as such must be out of the regular line of conduction from the reservoir to the nibs, so as not to form any part of the regular feed or the feed proper. If, for instance, they were made as an enlargement of the feed-duct at any point, that would change the regular feed—would be a means of regulation of the feed. At the same time they must have some communication with the reservoir in order that the ink may enter them from the regular line of conduction when the unusual circumstances cause an overflow. In Figs. 5, 6, and 7 the only difference between the other form is that the transversely-projecting pieces C³ are in the first form made a part of the feed-bar C and in the second they consist of an

additional piece C⁴, screwed or otherwise attached to the feed-bar at that point. This screw is shown at F. A single overflow-pocket illustrates the principle, but two are better. With two overflow-pockets H H they should be connected by means of a slot or opening G, cut in the feed-bar, in order to equalize the pressure.

I claim as my invention—

1. In a fountain-pen, consisting of a hollow reservoir, an ordinary nibbed writing-pen, and a feeding device between the two through which the ink is conducted from the reservoir to the nibs; the combination of the nibbed writing-pen, and a transverse piece extending across the same outside of the feed, forming therewith and with the pen an overflow-pocket; such pocket being out of the direct line of conduction, from the reservoir to the nibs, but in indirect communication therewith, and also in communication with the slit of the nibs.

2. In a fountain-pen, consisting of a hollow reservoir, an ordinary nibbed writing-pen, and a feeding device between the two, consisting of a feed-bar with a groove adjacent to the pen, serving as the feed-duct; the combination with such writing-pen and feed-bar, of transverse pieces extending across the pen, outside of the feed, forming with the pen overflow-pockets; such pockets being out of the direct line of conduction from the reservoir to the nibs, but in indirect communication therewith, and also in communication with the slit of the nibs.

3. In a fountain-pen consisting of a reservoir and feed-piece by which the ink is conducted to the pen, the combination of the pen, the feed-bar containing a groove on the side next the pen and a capillary fissure connected therewith and pieces extending transversely from that side of the feed-bar opposite the feed-groove toward the edge of the pen near its point and forming with the curved inner surface thereof overflow-reservoirs.

4. In a fountain-pen, consisting of a hollow reservoir, an ordinary nibbed writing-pen, and a feeding device between the two through which the ink is conducted from the reservoir to the nibs; the combination of the nibbed writing-pen, and transverse pieces extending across the same outside of the feed, forming with the pen overflow-pockets; such pockets being out of the direct line of conduction from the reservoir to the nibs, but in indirect communication therewith, also in communication with the slit of the nibs, and also in free communication with each other.

In witness whereof I have attached my name, in the presence of two witnesses, this 17th day of August, 1898.

WILLIAM I. FERRIS.

Witnesses:

SALTER STORRS CLARK,
HERBERT H. KELLOGG.