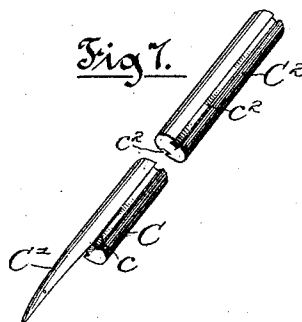
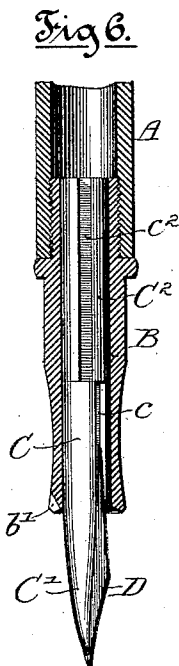
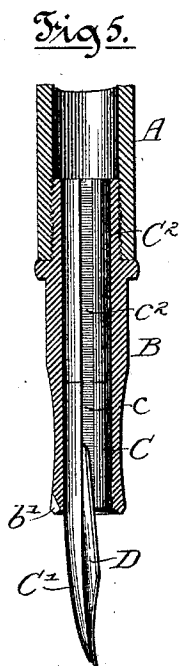
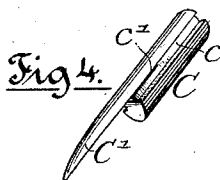
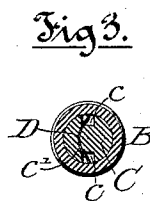
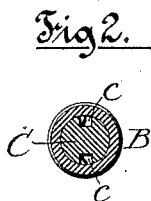
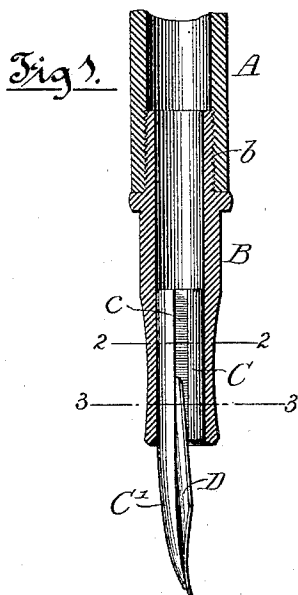


(No Model.)

H. T. REED.
FOUNTAIN PEN.

No. 449,295.

Patented Mar. 31, 1891.



Witnesses
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UNITED STATES PATENT OFFICE.

HUGH T. REED, OF CHICAGO, ILLINOIS.

FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 449,295, dated March 31, 1891.

Application filed October 21, 1890. Serial No. 368,786. (No model.)

To all whom it may concern:

Be it known that I, HUGH T. REED, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful
5 Improvements in Fountain-Pens; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked
10 thereon, which form a part of this specification.

This invention relates to fountain-pens of that class which are provided with a reservoir for the ink and in which the ink is fed to the
15 pen by means of a passage leading from the reservoir of the pen, through which passage the ink flows by capillary action aided by gravity, and through which the air enters the reservoir to replace the ink which is used.

20 The invention consists in the matters hereinafter described, and pointed out in the appended claims.

As shown in said drawings, Figure 1 is a sectional view, with parts in side elevation, of
25 the lower part of a pen constructed in accordance with my invention. Fig. 2 is a cross-section thereof, taken upon line 2 2 of Fig. 1. Fig. 3 is a cross-section thereof, taken upon line 3 3 of Fig. 1. Fig. 4 is a perspective view
30 of the core shown in Fig. 1 removed from the tubular part of the pen. Figs. 5 and 6 are sectional views showing a modified construction in the ink-feeding devices. Fig. 7 is a
35 perspective view of the two cores shown in Figs. 5 and 6. Fig. 8 is a view of a core constructed for feeding the ink solely to the under side of the pen. Fig. 9 shows a core constructed for feeding ink to both the upper
40 and lower sides of the pen.

As shown in Figs. 1, 2, and 3, A is the barrel of the pen, which constitutes the ink-reservoir and which is closed at its upper end.

B is a detachable tube or "point-section," which carries the pen and the ink-feeding devices, and which is connected with the body
45 by means of a screw or other joint b. The tube B is commonly removed from the body A when it is desired to fill the latter with ink. The tube B is provided with a bore, which is
50 cylindric or slightly tapered, and within the same is located a plug or core C, by which the pen D is supported, and which is pro-

vided with means for feeding ink to the pen. Said core is provided at its lower end with a feed-prong C', which reaches over the outer
55 or upper surface of the pen to a point near the end of the same, said prong being made of a flexible material and preferably made integral with the core, as shown. Commonly
60 the core and prong will be made of celluloid or of hard or soft rubber. Said core C is provided on its opposite sides with longitudinal grooves c c, extending from end to end of the
65 same and forming when the core is inserted in the tube B two passages to allow the flow of ink from the reservoir to the pen D. The
said core is also provided at its outer end with a slit c' to receive the pen, said slit extending through the body of the core from
70 one of the grooves to the other and opening into the said grooves, so that when the pen is inserted the side edges thereof will project into the grooves, as clearly seen in the sectional view, Fig. 3.

In the operation of a pen thus constructed
75 the ink flowing from the reservoir fills the grooves c c and is drawn by capillary action into the space between the prong C' and the pen D, said space obviously communicating
80 with the lower ends of the groove at the back of the pen. The pressure of the pen against the paper in writing flexes the pen, and thereby produces a movement of the pen relatively to the prong, and this movement, aided
85 by gravity, causes the ink to be drawn downwardly from the grooves c c between the said prong and the pen. Air for replacing the ink thus drawn out of the reservoir passes upwardly through the said grooves c c, entering
90 the said grooves at the under side of the pen, so that a constant and uniform flow of ink is obtained while the pen is in use. By so arranging the longitudinal ink-passages that the pen-slit intersects the same and the edges
95 of the pen when inserted enter the passages the ink in all cases passes freely from the passages to the space between the pen and the prong, while at the same time air enters the reservoir through said passages, so that
100 a perfect and uniform flow of ink is obtained without the use of a tubular plug or core and without providing separate ink and air passages.

It is obviously not essential that two grooves

should be employed, inasmuch as a single groove on one side of the plug may be made of sufficient size to give the required supply of ink to the pen. By the employment of two
5 grooves, however, a more reliable feed is obtained by reason of the fact that the air is thereby given two openings through which to enter the reservoir, while at the same time a more uniform flow of ink is obtained, inas-
10 much as if one passage is partially stopped or clogged a flow of ink through the other passage will supply any deficiency until the obstruction passes out or is removed.

In Figs. 5, 6, and 7 I have shown a construction in which is employed a core C, similar to that hereinbefore described, and in addition thereto a second core C², arranged within the tube B above the plug C and having opposite parallel grooves c² c², corresponding with the grooves c c of said plug C.
20 When the two plugs C C² are turned so as to bring the grooves c c² in alignment with each other, as shown in Figs. 5 and 7, the operation of the parts will be the same as in the device shown in Fig. 1. In case, however, it is desired to cut off the flow of ink to the pen when the same is not in use or to regulate the supply of ink to the pen, either one of the
25 plugs C or C² may be rotated so as to either entirely or partially cut off communication between the said grooves c c².

In Fig. 6 the plug C is shown as turned within its seat so as to bring the grooves c c out of alignment with the grooves c² c², and thereby cut off entirely the supply of ink to the pen. The pen may then be carried in any position without possibility of the escape of the ink. In case the flow of ink to the pen is too great when the grooves c c² are in alignment with each other, either core C or C² may
40 be slightly turned, so as to diminish the area for the passage of ink. When the parts are arranged for turning the core C, the tube B will preferably be provided with a notch b' or other mark to indicate the position of the said core, so that the latter may be instantly turned into position for opening or closing the feed-passages, as desired, by noting the position of the prong relatively to said mark.
45 If preferred, the core C² may be turned for cutting off or regulating the supply of ink, instead of the core C. The drawings show said core C² as extending to the inner or upper end of the tube B, and when said core is so made a suitable pronged implement may
50 be engaged with the upper ends of the passages c² c² for turning the said core; or, if desired, the said core C² may be extended beyond the end of the tube B, in which case it may be turned by the fingers.

The novel features of my invention may be applied as well to a feeding device in which the ink-feeding prong is located below or adjacent to the under surface of the pen as in
65 one in which the said prong is located at the

upper surface of the pen. Such a construction is shown in Fig. 8. In this instance the core C is provided with lateral grooves c c and a slit c' for the pen and has a prong C³ adapted to rest against the under surface of
70 the pen. The said prong C³ will preferably be provided with longitudinal recesses or rabbets c³ c³, which form continuations of the grooves c c, and which constitute passages adjacent to the under surface of the pen to facilitate the flow of ink toward the point of the
75 pen.

In Fig. 9 I have shown a core C having prongs C' C³ both above and below the pen, the construction and operation of said prongs being the same as in the case of those hereinbefore described.

A revoluble plug having an eccentric passage forming part of the passage or conduit through which the ink flows from the reservoir to the pen constitutes an important and valuable improvement, inasmuch as it affords a simple and convenient means of limiting or cutting off the flow of ink to the pen, and as far as this improved feature is concerned the
85 construction of the other parts of the ink-feeding devices may be greatly varied without departure from my invention.

I claim as my invention—

1. An ink-feeding device for fountain-pens, comprising a solid plug or core, a tube surrounding the plug or core, and a feeding-prong, said plug or core being provided with a slit for the pen and an external longitudinal groove or grooves, both for the exit of ink and
90 the inflow of air, terminating at the inner surface of the feeding-prong, said slit for the pen extending into the groove or grooves, substantially as described.

2. An ink-feeding device for fountain-pens, in which the ink-conduit is formed in part within a revoluble plug or core by means of an external longitudinal groove therein closed by the surrounding tube and in part by a passage which is equally eccentric relatively to the plug or core, whereby the parts of the ink-conduit may be made either continuous or non-continuous by turning said
105 plug or core, substantially as described.

3. An ink-feeding device for fountain-pens, comprising two plugs or cores arranged with their end surfaces in contact and each provided with an eccentric longitudinal ink-passage, and a tube surrounding said plugs or cores, one of said plugs or cores being revoluble without endwise movement in the said tube to enable the ink-passage to be closed,
115 substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence
125 of two witnesses.

HUGH T. REED.

Witnesses:

C. CLARENCE POOLE,
GEORGE W. HIGGINS, Jr.