(No Model.)

G. H. SACKETT.

FOUNTAIN PEN.

No. 347,961. Patented Aug. 24, 1886.

Fig. 1.

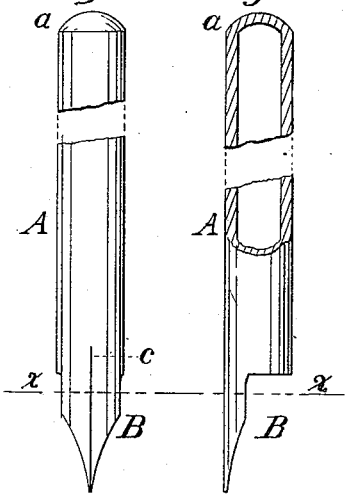


Fig. 2.

Fig. 3.

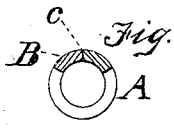


Fig. 4.

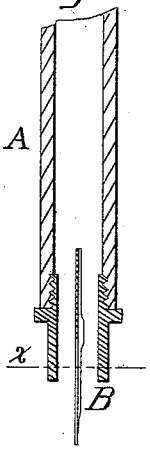


Fig. 5.

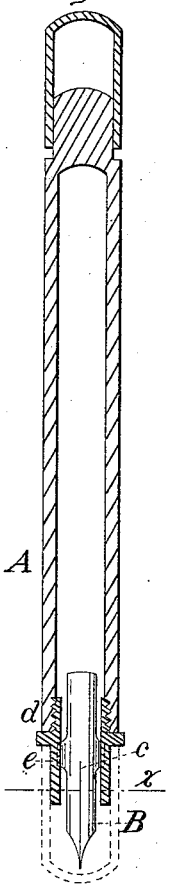


Fig. 6.

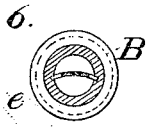


Fig. 7.

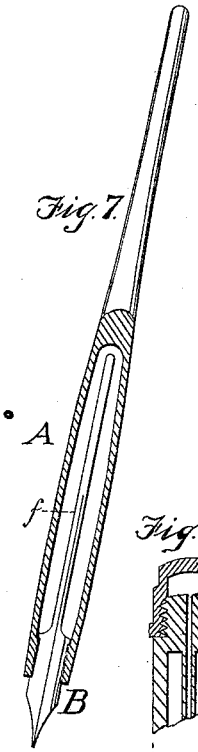


Fig. 8.

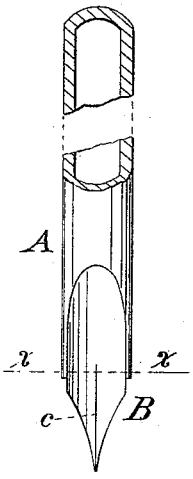


Fig. 9.

Fig. 10.

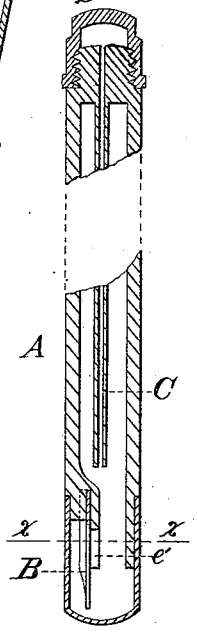
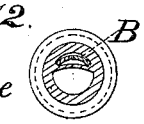


Fig. 11.

Fig. 12.



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UNITED STATES PATENT OFFICE.

GEORGE H. SACKETT, OF BROOKLYN, NEW YORK, ASSIGNOR TO GEORGE O. SACKETT, OF SAME PLACE.

FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 347,961, dated August 24, 1886.

Application filed April 23, 1883. Serial No. 92,623. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. SACKETT, of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Fountain-Pens, of which the following is a specification.

This invention relates to that class of writing implements in which ink is automatically supplied to the pen from a reservoir or hollow holder, and which are commonly termed "fountain-pens."

Its object is to provide for the facile transmission of the ink from the holder to the pen without the aid of the special devices commonly employed and considered necessary for such purpose. To this end it comprises a novel construction of a fountain-pen with a holder closed at its upper or outer end, and having a suitable opening at its lower extremity, and a slitted writing-pen having its slit carried upward in immediate communication with the ink-space of said reservoir, in such manner that the volume of ink being in direct contact with the inner end of the slit insures the action of the latter as a channel or conduit to conduct the requisite current of ink to the point of the pen during the operation of writing, thereby dispensing, as hereinbefore indicated, with the special devices or appliances heretofore considered necessary in this class of writing implements.

Figure 1 is a back view, on an enlarged scale, of a fountain-pen embracing my said invention. Fig. 2 is a side view and partial section of the same. Fig. 3 is a cross-section thereof, taken in the line *x x* of Figs. 1 and 2. Figs. 4, 5, and 6 are like views of a pen, showing a modification of my said invention. Fig. 7 is a longitudinal sectional view, still further illustrating my said invention. Fig. 8 is a view from the under side, and Fig. 9 a transverse sectional view in the line *x x* of Fig. 8, showing another modification of my said invention. Figs. 10 and 11 are corresponding views of another modification of my said invention.

Referring first to Figs. 1, 2, and 3, A is the reservoir, which is hollow or tubular and closed at its upper or outer end, as shown at *a*, and open at its lower end. This construction of the reservoir is common to the several modifications of my said invention. To the lower end of said holder is provided the pen B.

As shown in Figs. 1, 2, and 3 aforesaid, the pen is formed in one piece with the hollow reservoir A, very much as a pen is provided upon the tubular portion of a quill on the well-known quill pen; but in the present case the slit C is carried inward or upward until its inner end communicates with the interior of the tubular reservoir A—that is to say, with the ink-reservoir contained or provided therein. The ink sustained in the said reservoir by atmospheric pressure from below passes, by capillary attraction, direct to said slit, and as the ink is exhausted from the point of the pen in the operation of writing a constant flow to and along the said slit is secured, thereby providing the requisite supply to the point of the pen so long as the operation of writing is continued, and this without the aid of any additional mechanical device to conduct the ink to the slit, and thence to the point of the pen.

Having reference to Figs. 4, 5, and 6, the pen B is thrust bodily into the open lower end of the reservoir A, its edges fitting into grooves or recesses provided for their reception in the interior surface of the reservoir, the pen being thus held in position with its slit *c* extended upward or inward, with its inner extremity in such relation with the space occupied by the ink that the latter may pass directly into the inner portion of the slit *c*, and be thence transmitted to the point of the pen.

When desired, the reservoir A may, for convenience in filling and changing pens, be made in two parts, *d e*, screwed together, as shown in Figs. 4 and 5, the lower one constituting a socket, in which the pen is inserted in position and relation to the ink-reservoir as hereinbefore explained.

Having reference to Fig. 7, in this modification the pen B is inserted directly within the open lower end of the hollow reservoir A, substantially as described with reference to Figs. 4, 5, and 6. Extending inward from the pen, and preferably attached thereto, or, if desired, integral therewith, as represented in said

figure, is an inwardly-projecting tongue, *f*, which constitutes a feeding-stem, and which, by the additional surface presented to the ink within the reservoir, provides an additional means for directing the ink downward within the reservoir to the inner end of the slit of the pen.

Having reference to Figs. 8 and 9, the pen is formed in one with the holder, as in Figs. 1, 2, and 3, except that instead of being formed at the upper side of the reservoir it is provided at the lower side, which is made concave in cross-section, as shown in Fig. 9, the ink passing to the slit of the pen (said slit being extended into the ink-reservoir, as in the other modifications of my said invention) at the back or upper side of the latter, and thence through said slit to the point.

Having reference to Figs. 10 and 11, the pen is arranged at the under side of the reservoir in substantially the same relation therewith as in Figs. 8 and 9, with this modification, that the under side of the lower end of the reservoir is formed into a socket to receive the inner portion of the pen, and is formed with a longitudinal slot, *c'*, coincident with the slit of the pen, which said slot, in fact, forms part of the ink-reservoir thereof, and which is so arranged that the ink may pass readily therefrom to and into the inner end of said slit, and thence to the point of the pen, as in the other modification, hereinbefore described, of my said invention.

It is to be observed that in order to insure the herein-described feeding-action of the slit *c* of the pen it is requisite that the back of the pen should be of such thickness that the opposing flat surfaces of said slit shall afford substantial adhesive attraction to the ink—in other words, a substantially capillary attraction, which will insure the flow of the ink downward from the top of the slit as fast as the same is exhausted from the bottom thereof. This thickness of the pen may be varied within wide limits, but may be stated, in general, as twice that of an ordinary steel pen, or, if desired, considerably more; in some instances, perhaps, a little less.

When desired, the opening at the lower end of the holder or reservoir may be in duplicate, as shown in Fig. 12—in other words, may be divided into two compartments, into one of which the pen may be inserted and secured, as shown in said figure.

It is of course to be understood that, when desired, the reservoir A may be made with its lower end detachable, for convenience in filling the reservoir and changing the pen.

When desired, the reservoir may be provided with the ordinary air-tube, as shown at C in Fig. 10, thus admitting air to the lower end of the reservoir.

It will be observed that, as represented in the drawings, the whole reservoir is closed at its upper end and open at its lower end, air being admitted through the opening at the lower end to supply the place of the ink withdrawn from the reservoir in the act or operation of writing. It will further be observed that when an air-tube is used to permit the inflow of air at the lower end of the reservoir, as aforesaid, the opening formed directly in the lower end may be proportionally diminished, to simply permit the flow of ink to the pen.

What I claim as my invention is—

1. The combination, with the reservoir of a fountain-pen, closed throughout, except at its permanently-open lower end, of a slitted pen, the slit whereof extends from the point of the pen upward or inward to or into the said open lower end of the reservoir, to form the channel for the passage of the ink from said open lower end to the point of the pen, substantially as and for the purpose herein set forth.

2. A reservoir or tubular holder constructed with longitudinal grooves in the inner walls of its lower end, in combination with a pen the lateral edges of which fit into said grooves, thereby insuring the retention of the pen in place, substantially as and for the purpose herein set forth.

3. The combination, with the reservoir of a fountain-pen, closed throughout, except at its permanently-open lower end, of an internal feeding-stem fixed in its relation with the said reservoir, and arranged to assist the flow of ink downward in the said reservoir to feed the ink toward the pen in the act of writing, and to aid in filling the pen when the reservoir is reversed, substantially as and for the purpose herein set forth.

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