

(No Model.)

G. A. BIERDEMANN.
FOUNTAIN PEN.

No. 453,608.

Patented June 9, 1891.

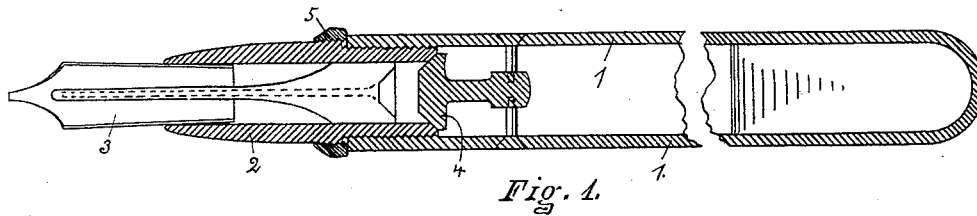


Fig. 1.

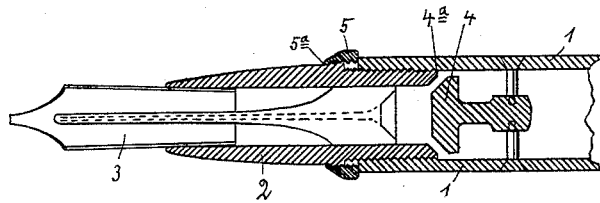


Fig. 2.

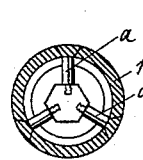


Fig. 3.

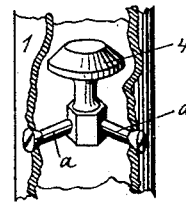


Fig. 4.

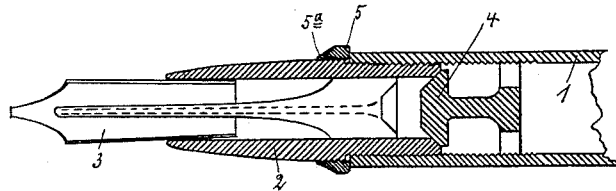


Fig. 5.

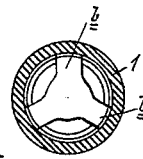


Fig. 6.

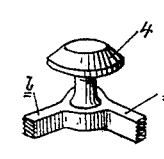


Fig. 7.

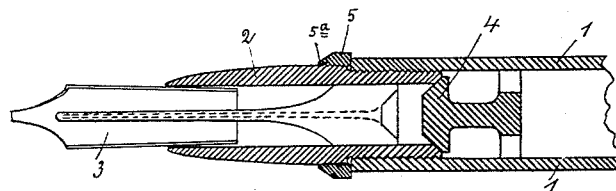


Fig. 8.

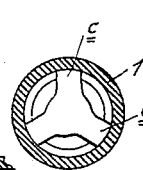


Fig. 9.

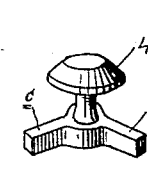


Fig. 10.

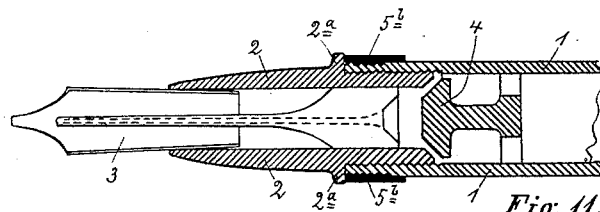
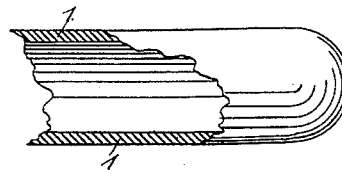


Fig. 11.



WITNESSES.

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GUSTAVUS A. BIERDEMANN, OF UTICA, NEW YORK.

FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 453,608, dated June 9, 1891.

Application filed December 17, 1890. Serial No. 374,958. (No model.)

To all whom it may concern:

Be it known that I, GUSTAVUS A. BIERDEMANN, of Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Fountain-Pens; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and numerals of reference marked thereon, which form part of this specification.

My invention relates to an improvement in fountain-pens.

In the drawings which accompany and form a part of this specification, and in which similar letters and numerals of reference refer to corresponding parts in the several figures, Figure 1 shows a longitudinal central section of a pen constructed according to my improvements. Fig. 2 shows a portion of the same part shown in Fig. 1 in the open position. Fig. 3 shows a cross-section on line A B of Fig. 2, looking toward the left. Fig. 4 shows a perspective of the valve, a portion of the barrel being broken out to permit of this view. Fig. 5 shows the same part shown in Fig. 2, with a modified form of securing the valve. Fig. 6 is a cross-section of Fig. 5, taken as Fig. 3 is taken. Fig. 7 shows a perspective view of the valve shown in Fig. 5 removed. Fig. 8 shows the same parts shown in Fig. 2, with yet another modified form of securing the valve. Fig. 9 shows a section of Fig. 8, taken as Fig. 3 is taken. Fig. 10 shows a perspective view of the valve shown in Fig. 8. Fig. 11 shows a longitudinal section of a portion of the pen, showing a modified form of shoulder and ferrule.

Referring more specifically to the reference-letters and numerals, 1 indicates the ink-reservoir closed at one end, the shell or barrel of the reservoir being the pen holder or handle. The lower or open end of the reservoir is screw-threaded internally to receive the screw-threaded end of pen-section 2, which is provided with a pen 3, secured therein, and has suitable ink passage-ways and conductors to carry the ink to the pen. Secured within the reservoir adjacent to the open end, and with its face toward the open end, I provide a fixed

valve 4. Against this valve is adapted to be brought valve-seat 4^a on the inner end of the pen-section 2.

5 is a joint-protecting ferrule and lock screw-threaded internally to engage on screw-thread 5^a on the pen-section.

The valve 4 may be secured in the barrel or reservoir by screws *a* passing through the shell or wall of the reservoir and into the shank of the valve, leaving ink-ducts or passage-ways by the valve, as shown in Figs. 3 and 4, or the valve-shank may be provided with radiating-arms *b*, as shown in Figs. 6 and 7, which may be screw-threaded on their outer ends to engage internal screw-threads of the reservoir or barrel, which in that case are continued down to or below the valve 4, as shown in Fig. 5, or the screw-threads may be united from the arms, as shown at *c*, Figs. 9 and 10, in which case the valve may be placed in the barrel while heated and shrunk in.

In the modified form of construction shown in Fig. 11, in lieu of the joint-protecting ferrule and lock 5, (shown in previous figures,) I provide a shoulder 2^a on the pen-section, and a joint-protecting ferrule 5^b screw-threaded internally to run on a screw-thread on the external surface of the end of the barrel.

The operation of the device is substantially as follows: Taking the pen in the position shown in Fig. 1, in which the reservoir is presumed to be full, it will be observed that the seat is closed down onto the valve, so that all flow of ink from the reservoir is shut off. When it is desired to bring the pen into use, the pen-section is screwed out, thus relieving the valve-seat from the valve and allowing the ink to flow through the ducts by the valve and thence to the pen. The amount of flow is regulated by the relative relation of the valve and seat, and this is determined by the adjusting-screw. The joint between the pen-section and barrel is kept closed and the pen-section locked to the barrel by screwing the ferrule 5 until it engages the end of the barrel, or, in the case of the construction shown in Fig. 11, until the ferrule engages the shoulder of the pen-section. The flow of ink to the pen in a fountain-pen constructed on the principle herein described can always be maintained the same without reference to the

amount of ink contained in the reservoir. When it is desired to discontinue the use of the pen, the ferrule is screwed back and, the pen being held in a vertical position with the
5 pen up, the pen-section may then be screwed outward a little to allow any ink outside of the reservoir to flow back. The pen-section is then screwed down until the valve-seat firmly engages the valve, thus securely closing the
10 reservoir and entirely obviating any danger of escaping ink, no matter in what position the pen is carried.

It is evident that the valve and seat might be interchanged, and that other modifications
15 and changes in and from the constructions described may be made, without departing from the spirit of my invention or the equivalents of my construction.

What I claim as new, and desire to secure by Letters Patent, is—

The combination, in a fountain-pen, of a
20 barrel 1, closed at one end and open and screw-threaded internally and externally at the other, a pen-section 2, having shoulder 2^a, a screw-threaded portion and valve-seat at its
25 inner end, a joint-protecting ferrule 5^b, and a valve 4, mounted on screw-threaded arms 7, substantially as set forth.

In witness whereof I have affixed my signature in presence of two witnesses.

GUSTAVUS A. BIERDEMANN.

Witnesses:

JOSIAH TERRY,
M. E. ROBINSON.