

No. 637,631.

Patented Nov. 21, 1899.

B. F. MARSH.  
FOUNTAIN PEN.

(Application filed June 15, 1899.)

(No Model.)

FIG.1.

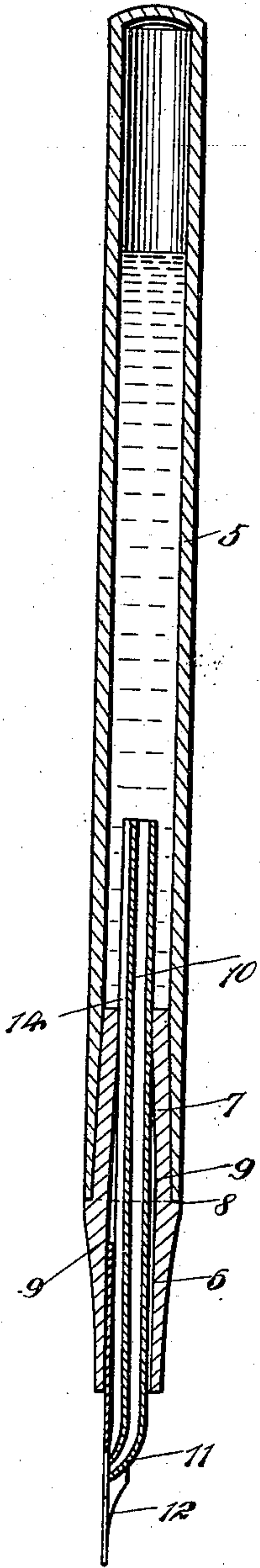


FIG.2.

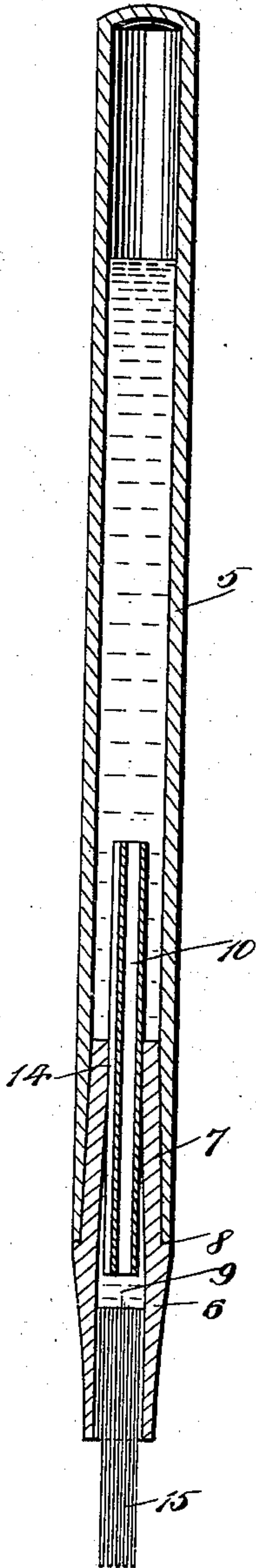
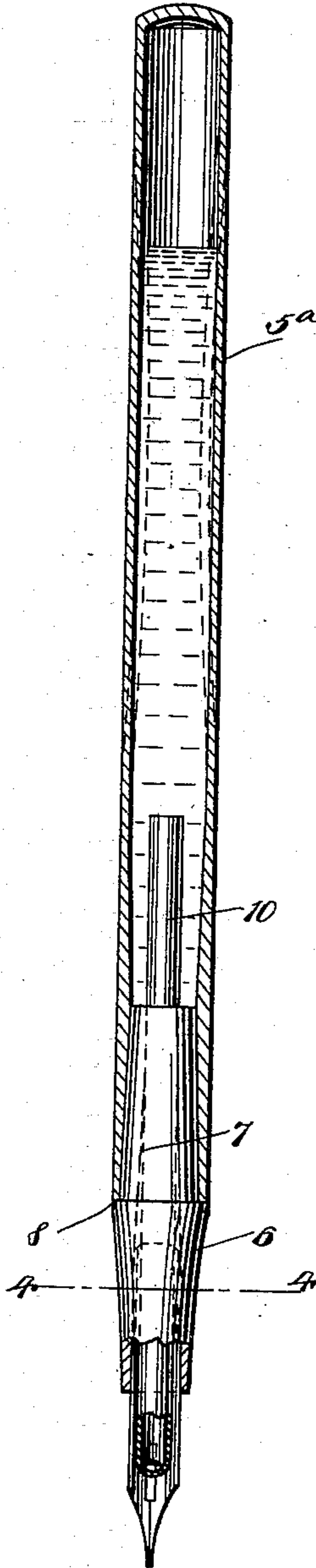


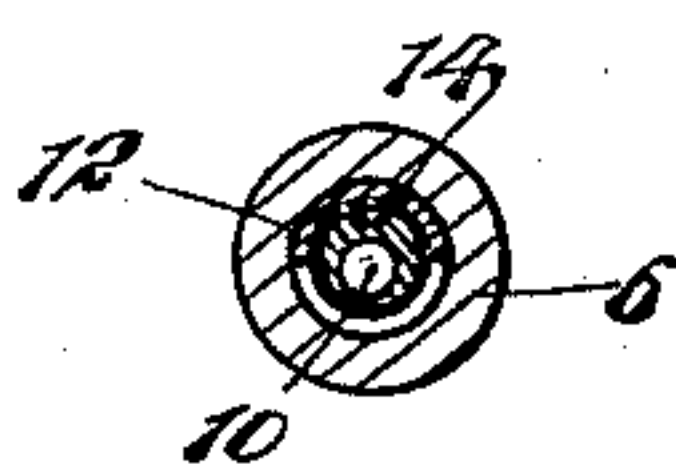
FIG.3.



WITNESSES:

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FIG.4.



INVENTOR

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# UNITED STATES PATENT OFFICE.

BYRON F. MARSH, OF EUSTIS, FLORIDA.

## FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 637,631, dated November 21, 1899.

Application filed June 15, 1899. Serial No. 720,665. (No model.)

*To all whom it may concern:*

Be it known that I, BYRON F. MARSH, of Eustis, in the county of Lake and State of Florida, have invented a new and Improved Fountain-Pen, of which the following is a full, clear, and exact description.

This invention relates to a fountain-pen in which the feed of ink is regulated by the air-pressure within the reservoir or barrel of the pen, and it involves certain novel features of construction, which will fully appear hereinafter.

This specification is the disclosure of one form of the invention, while the claims define the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a vertical section of the invention. Fig. 2 is a similar view showing a marking-pen fitted thereto. Fig. 3 is a sectional view of the invention, particularly illustrating a flexible reservoir or barrel; and Fig. 4 is a section on the line 4 4 of Fig. 3.

Referring particularly to Figs. 1, 3, and 4, the barrel or reservoir 5 or 5<sup>a</sup> of the pen has the pen-seat fitted into the open or lower end thereof, and this pen-seat comprises a tapering or otherwise-formed outer portion 6, with a plug 7 joined thereto, the plug being hermetically engaged with the inner walls of the reservoir, and the pen-seat has a shoulder 8, which bears against the end of the reservoir. The pen-seat is formed with a cavity 9, producing an ink-reservoir, and an air-tube 10 is passed through the pen-seat and projects beyond each end thereof. The inner end of the tube 10 is open to freely admit air into the reservoir 5 or 5<sup>a</sup>, and the outer or lower end is provided with a lateral offset 11, directed toward the pen-point 12. The tube 10 is open at the offset 11, and the tube is formed with an external groove 14 therein, the groove extending throughout the length of the tube and forming a passage for the ink from the reservoir 5 or 5<sup>a</sup> through the pen-seat 6 to the pen-point 12 at the point of the bend 11.

When there is no ink on the pen 12, the opening in the tube 10 at the bend 11 is unobstructed and air may pass through the tube

10 into the reservoir, thus permitting the ink to gravitate through the groove 14 to the ink-chamber 9 and thence to the pen itself. As the ink flows to the pen 12 it covers the opening at the bend 11 of the tube 10, and consequently the tube is ink-sealed, thus preventing the passage of air through the tube and stopping the feed of the pen. This condition continues until the ink on the pen 12 and in the chamber 9 is exhausted, whereupon the opening at the bend 11 is again uncovered and additional air is admitted to the reservoir, thus permitting further gravity-feeding of the ink.

The pen 12 may be of any sort desired, an ordinary commercial pen being applicable to the invention. The pen is held in place between the tapered outer portion 6 of the pen-seat and the tube 10, the shank of the pen fitting into the chamber 9. It will thus be seen that the pen itself may be readily removed and replaced by any other form of pen, if so desired.

In Fig. 2 I have shown a marking pen or brush 15 applied in place of the pen 12, and when this application is made the tube 10 is not directed out through the portion 6 of the pen-seat, but terminates within the pen-seat. The tube 10 fits firmly within the plug 7 of the pen-seat, and thus forms the ink-chamber 9, the ink being fed, as before described, through the groove 14 in the tube. When the ink in the chamber 9 is exhausted, air will be permitted to pass through the tube 10, and thus produce atmospheric pressure in the reservoir 5, so that the ink may feed by gravity through the passage 14. When the ink is in the chamber 9, it seals the tube 10 and prevents further feed, as has been explained. If so desired, the reservoir 5<sup>a</sup> (see Fig. 3) may be made flexible of any suitable material, so that by flexing the reservoir, as indicated by the dotted lines in Fig. 3, a positive pressure will be placed upon the ink and its feed enforced. This arrangement is advantageous when copying-ink is employed, since this ink is necessarily so thick as to render feed by other means uncertain.

Various changes in the form, proportions, and minor details of my invention may be resorted to without departing from the spirit



and scope of my invention. Hence I consider myself entitled to all such variations as may lie within the scope of my claims.

Having thus described my invention, I  
5 claim as new and desire to secure by Letters Patent—

1. A fountain-pen having a barrel, a pen-seat fitted into the open end thereof and comprising a plug hermetically engaging the inner  
10 walls of the barrel, and an outer portion projecting beyond the barrel, the pen-seat being formed with a longitudinal cavity extending through it from end to end, and an air-tube fitting in the cavity and projecting beyond  
15 each end of the pen-seat, the air-tube filling the inner portion of the cavity in the pen-seat and being firmly engaged with the inner walls of the plug of the pen-seat, and the outer portion of the cavity being enlarged at its outer  
20 portion to form an ink-reservoir and the air-tube being formed with a longitudinally-extending external groove forming an ink-duct, the outer portion of the air-tube serving to

hold the pen-point against the inner wall of the outer portion of the pen-seat.

2. A fountain-pen having a barrel, a pen-seat fitted in the open end thereof, and comprising a plug hermetically engaging the inner walls of the barrel and an outer portion projecting beyond the barrel, the pen-seat being  
30 formed with a longitudinal cavity extending through it from end to end, and an air-tube fitting in the cavity and projecting beyond the inner end thereof, the air-tube filling the inner portion of the cavity in the pen-seat and  
35 being firmly engaged with the inner walls of the plug of the pen-seat, the cavity being enlarged at its outer portion to form an ink-reservoir, and the air-tube being formed with a longitudinally-extending external passage forming an ink-duct, and a pen-point fixed in the  
40 outer portion of the pen-seat.

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Witnesses:

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