

(No Model.)

B. ROSENTHAL.
FOUNTAIN PEN.

No. 400,253.

Patented Mar. 26, 1889.

Fig. 1. Fig. 2.

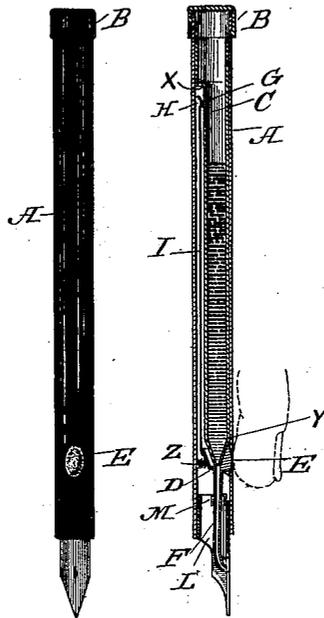


Fig. 3.

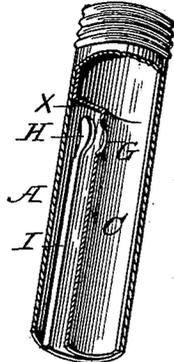


Fig. 4.

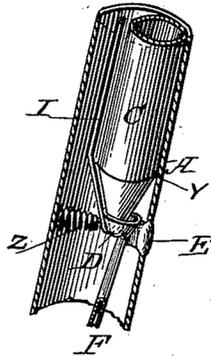


Fig. 5.



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FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 400,253, dated March 26, 1889.

Application filed August 22, 1888. Serial No. 283,403. (No model.)

To all whom it may concern:

Be it known that I, BERNIE ROSENTHAL, of Williamsport, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Fountain-Pens; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in fountain-pens; and it consists in, first, the combination of a hollow pen-holder, a stationary reservoir placed therein and having a tapering end, with a laterally-moving spring-actuated valve, which has a thumb-piece and a delivery-pipe connected thereto; second, the combination of the hollow pen-holder, a stationary reservoir for the ink placed therein and having a conical end, a laterally-moving valve, a thumb-piece for moving the valve, a spring for returning the valve to position, and a rod connected to the valve for opening and closing an opening in the upper end of the reservoir through which air is supplied, all of which will be more fully described hereinafter.

The objects of my invention are to provide a fountain-pen in which the supply of ink to the pen is regulated by the pressure of one of the fingers, to make the valve which controls the supply of ink spring-actuated, and to connect to it both the delivery-pipe and the rod which opens and closes the opening through which air is supplied to the reservoir, and to make the delivery-pipe movable in relation to the pen.

Figure 1 is a front elevation of a pen which embodies my invention. Fig. 2 is a vertical section of the same. Figs. 3, 4, and 5 are detached views of the same.

A represents a hollow pen-holder in which the reservoir C is rigidly secured, and which reservoir is just large enough at its upper end to snugly fit inside of the pen-holder and be closed by the screw-cap B. This reservoir C is reduced in size from the shoulder X down to the point Y, where it is made conical. Through the lower conical end of the reser-

voir is an opening just large enough to allow the ink to freely flow and supply the pen with fluid. This reservoir is made smaller from the point X to Y than the upper end of the reservoir, so as to allow an operating-rod to move between the inner side of the pen-holder A and the side of the reservoir, as will be more fully described hereinafter.

Placed just under the lower conical end of the reservoir C is the laterally-moving cup-shaped valve D, which is provided with a projection, E, upon one side, and which has the spring Z secured to it upon the other for the purpose of instantly returning the valve to position when it is left free to move. The projection E extends from the valve outward to or slightly through an opening made in the pen-holder, as shown in Figs. 1, 2, and 4, so that the pressure of the first finger while the pen is in use will cause the projection to force the valve D laterally just far enough to move that portion of the valve which is closing the lower end of the reservoir to one side and bring the supply-pipe F, which extends down from one side of the valve, just under the lower end of the reservoir. As long as the projection E is not pressed upon, the valve remains in the position shown in Fig. 4, and all flow of ink from the reservoir through the tube F to the pen is cut off. When the valve D is forced back into the position shown in Fig. 2 by the pressure of the finger upon the projection E, the ink flows freely through the end of the reservoir and through the tube F down to the pen. Placed inside of the lower end of the pen-holder is the usual curved piece of sheet metal, L, which is provided with a small guide, M, at its upper end for the supply-tube F to pass through. As the valve D is forced backward, this guide M serves as a fulcrum, in which the tube F moves, so as to bring the lower end of the tube in contact with or close to the pen. The piece L, with the extension of the guide M, is of the ordinary construction used in connection with pen-holders for holding the pen in position, and hence pens of any kind may be used in this connection. The frictional contact between the lower end of the reservoir and the valve is sufficiently great to cut off the flow of ink and to prevent any air from

passing into the reservoir. As the cap B also closes the upper end of the reservoir air-tight, it is necessary to make provision for the admission of air to the reservoir above the ink 5 before the ink will flow to the pen. For this reason a wire or rod, I, is secured to the valve D, and extends up along the side of the reservoir, as shown, and has connected to its upper end a valve, II, of any suitable construction, for closing the opening G through the 10 side of the reservoir. When the valve is in the position shown in Fig. 4, the valve H closes the opening G; but when the valve is forced backward, as shown in Fig. 2, the rod 15 I is forced backward at the same time, and the valve II is forced back from the opening G, so as to allow air to pass up through the pen-holder and into the reservoir, as shown. After the valve D has been moved laterally 20 by the pressure of the finger, the flow of ink takes place as soon as the air begins to pass into the reservoir through the opening G.

Having thus described my invention, I claim—

25 1. In a fountain-pen, the combination of the reservoir with a laterally-moving valve provided with a projection and a suitable tube connected to the valve and which conveys the ink to the pen, substantially as shown.

30 2. In a fountain-pen, the combination of a reservoir having a tapering or conical end, a laterally-moving spring-actuated valve provided with a projection to receive the pressure of the finger, and a movable supply-pipe

connected to the valve, substantially as described. 35

3. In a fountain-pen, the combination of the reservoir provided with an air-opening, a laterally-moving valve for closing its lower end, and a rod secured to the valve and provided 40 with a valve at its upper end for closing the air-opening in the side of the reservoir, substantially as set forth.

4. The combination, in a fountain-pen, of a reservoir, a valve for closing its lower end, a 45 projection for moving the valve, a supply-pipe for conveying the ink to the pen, and a thimble, L, provided with a guide for the supply-pipe, substantially as specified.

5. In a fountain-pen, the combination of the 50 holder provided with an opening through one side, the reservoir secured inside of the holder and provided with an air-opening and made conical or tapering at its lower end, a spring-actuated valve provided with a projection, a 55 rod for operating a valve which controls the supply of air to the reservoir, and which rod is secured to the valve, a tube for supplying ink to the pen connected to the valve, and a 60 thimble, L, provided with a guide through which the end of the supply-pipe passes, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

BERNIE ROSENTHAL.

Witnesses:

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LOUIS SCHNEIDER.