(No Model.)

W. E. GARD.

FOUNTAIN PEN.

No. 264,451. Patented Sept. 19, 1882.

Fig. 1.

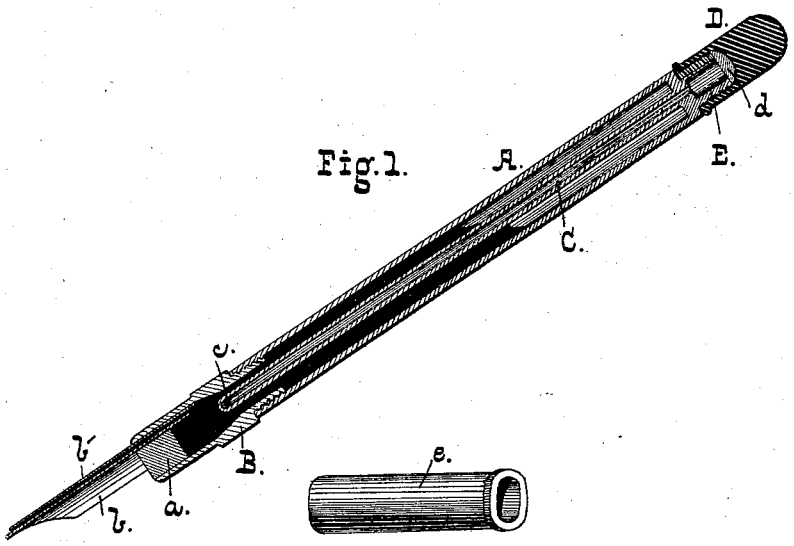
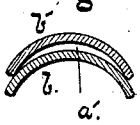


Fig. 2.



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WILLIAM E. GARD, OF BALTIMORE, MARYLAND.

FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 264,451, dated September 19, 1882.

Application filed May 15, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. GARD, of Baltimore city, State of Maryland, have invented certain new and useful Improvements in Fountain-Pens; and I hereby declare the same to be fully, clearly, and exactly described as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a central longitudinal sectional view of the device complete, the cap being shown in perspective; and Fig. 2 is a cross-sectional view, on an enlarged scale, between *b* and *b'*, Fig. 1.

My invention relates in general to that class of fountain-pens in which the ink is contained in the hollow handle and is fed to a space between the pen and a plate curved to substantially fit the pen and placed either above or below it.

My invention has for its object to furnish a fountain-handle adapted for use with an ordinary pen, or rather with two ordinary pens; and it consists, first, in a fountain-pen having its reservoir-handle completely closed at the bottom by a plug adapted to admit of the insertion of the pens; and, second, in a fountain-pen having two ordinary pens inserted in the handle, the latter being closed at the bottom and provided with a central air-tube, all as hereinafter set forth.

In the drawings, A is the handle, having at its lower end a cap, B, screwed thereon. These parts are made of metal, vulcanite, or other suitable material. The lower end of the cap B is closed by a plug, *a*, preferably of soft rubber, as that material is soft and elastic enough to admit of the insertion of pens of various sizes and make a tight joint at the bottom of the cap.

C is the air-tube, having air-hole *c* at its lower end, and D is the tip, screwed on the end E of the handle. A cork or rubber cushion, *d*, is preferably placed in the tip D, and the threaded end E is flattened at one side, so as to admit air to the tube C when the tip is slightly unscrewed. A cover, E, is arranged to fit over the pens to protect them when not in use, and may be placed on the tip D while the device is being used.

Two ordinary pens, *b b'*, are forced in between the plug *a* and cap B, as shown, the lower or writing-pen being made to project slightly beyond the upper one. Instead of fitting the pens between the plug and the cap, the plug may have a slit formed in it, and this is perhaps preferable, as it admits of the use of pens differing greatly in size or curvature. The two pens *b b'* are of any of the well-known forms, but of course are alike, so as to fit closely together, as shown in Fig. 2. The inner or concave side of the outer pen only touches the convex side of the inner pen at the edges, because the radius of its curvature is shorter by the thickness of the metal. A meniscus-shaped space, *a'*, intervenes between the two pens throughout their length, and in the case of the ordinary forms of pens, the arc of which is about one hundred degrees, this space in the center is about as wide as the thickness of the metal from which the pens are stamped. It forms a channel or capillary space from the reservoir to the tips of the pens for the passage of the ink. Now it will be observed that this space is of uniform maximum width down the centers of the pens from top to point and decreases to nothing at the contact edges of the pens, and, furthermore, that the pens are only in contact along their parallel edges, being out of contact from the points where the taper commences to the nibs. Capillary attraction, other things being equal, increases with the approximation to each other of the walls. As a result the ink is drawn by capillary attraction down to the commencement of the taper of the pens; but normally it practically ceases there, and the flow of ink would be due, if it occurred at all, solely to gravity or natural flow, and would take place whenever the pen were held vertically, whether its point touched the paper or not.

In practice, as the pen is pressed upon the paper the nibs are spread slightly, causing a flow of ink to the point, due in part to the capillary attraction of the cleft in the pen, but principally to the fact that the nibs of the lower pen are made to approach those of the upper one, and the flow of ink is in exact proportion, as it should be, to the pressure on the point.

An important advantage is attained by com-

pletely closing the cap B at the bottom and feeding the air through the tube C. An escape of ink from the reservoir except between the pens, and there only when and to the extent intended, is impossible. In some devices of this general class as heretofore constructed, especially when the reservoir was nearly empty of ink, and therefore full of air, the ink was very liable to flow too freely or even squirt out in making the first few lines with the pen, and it was due to the expansion of the air in the reservoir by the heat of the hand. In my device this cannot occur, because any expansion of air will simply cause the ink to rise in the central tube until the equilibrium is restored.

Should the space between the pens become clogged with ink it may readily be cleaned by thrusting a thin and narrow piece of steel (which may be affixed to the cover *e*) between the pens; or the latter may be pulled out, wiped, and replaced.

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

1. The combination, in a fountain-pen, of the reservoir provided with an air-vent, the plug, constructed as described, inserted in the bottom of said reservoir, leaving sufficient space for the insertion of two pens, and two ordinary pens inserted together through said opening or space and having a thin meniscus-shaped space between them through which the ink may flow, as set forth.

2. In a fountain-pen, a reservoir having a plug at its bottom, and two ordinary pens secured together by the plug, as described, and an air-tube extending down in the interior of the reservoir, as set forth.

3. In combination with the reservoir having an air-vent in its upper end, an elastic plug securing two ordinary pens in its lower end, as set forth.

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