(No Model.)

J. T. GOODRICH.

FOUNTAIN PEN.

No. 302,560. Patented July 29, 1884.

Fig. 1.

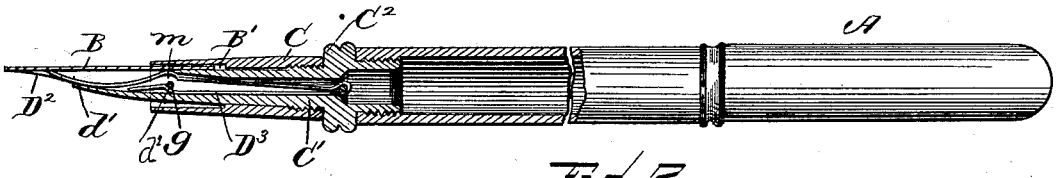
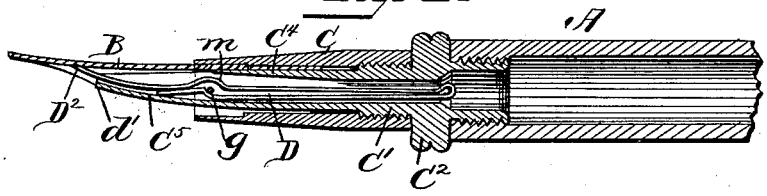


Fig. 2.



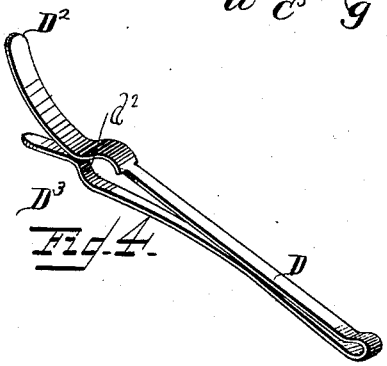


Fig. 4.

Fig. 3.

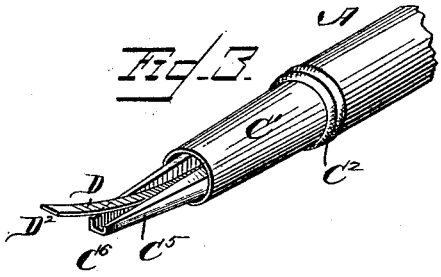


Fig. 5.

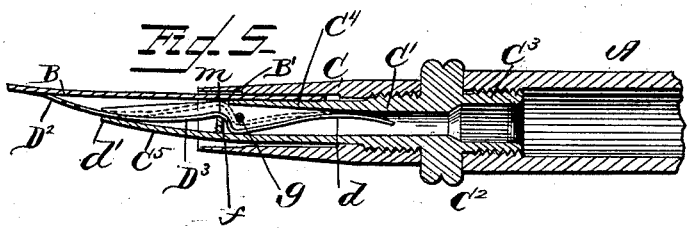
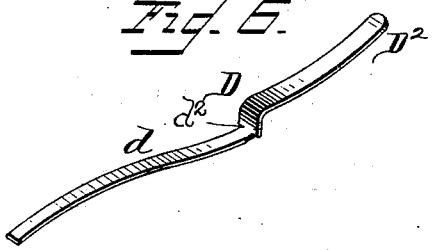


Fig. 6.



WITNESSES

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JAMES T. GOODRICH, OF NORWICH, CONNECTICUT.

FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 302,560, dated July 29, 1884.

Application filed August 3, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES T. GOODRICH, of the city of Norwich, county of New London, and State of Connecticut, have invented certain new and useful Improvements in Fountain-Pens, which improvements are fully set forth and described in the following specification, reference being had to the accompanying drawings.

This invention has relation to improvements in fountain-pens, which are fully set forth and described in the following specification, reference being had to the accompanying drawings.

The object of my invention is to simplify the valve in such a pen, and to so construct it that the flow of ink may be controlled by a positive movement of said valve, and when not in use be effectually cut off from the pen.

The invention consists in the construction and arrangement of parts, as will be hereinafter described and particularly claimed.

In the accompanying drawings, Figure 1 represents a fountain-pen, partly in section, having my improvements attached, with the pen at rest and the valve closed. Fig. 2 represents the same with the pen-nibs raised as in the act of writing and the valve opened. Fig. 3 is a perspective view of the pen-holder with the pen removed. Fig. 4 is a perspective view of the double valve as shown in position in Figs. 1 and 2. Fig. 5 is a central longitudinal section with the single-strip valve. The dotted lines in this figure represent the position of the valve when closed. Fig. 6 is a perspective view of the single valve.

B is a pen of common construction, fitted into an annular recess, B′. C is the section, provided with said recess B′. The section C is hollow, and provided with inside threads extending from its inner end inward about one-fourth the length of said section. C^2 is a flange interposed between the barrel A and section C. Said flange is provided with valve-retaining projections C^4 C^5. The valve D lies in a groove, C^6, in the projection C^5. The upper part of said projection is open to admit the spring action of the valve, as shown in Fig. 3. The groove C^6 is the channel for the flow of ink. Said groove extends back to the flange C^2. The opening in said flange is round.

The valve in my fountain-pen is constructed of flattened wire, of gold or any other non-corroding material having spring enough to accomplish the desired object. The outer end of said flattened wire finds a convenient bearing on the under side of the nibs of the pen, thus forming a conductor for the ink as it passes outward from the ink-channel. That part of the wire *d* which passes inward is preferably reduced in width to render it more flexible, and, reaching nearly into the reservoir, finds a bearing on the upper side of the ink-channel. (See Fig. 5.) At a point nearly in the center of the mouth of the ink-channel is a pin, *g*, which passes through the section C, and is secured rigidly in place by riveting at either end. At *f* is a shoulder extending upward from the bottom of the longitudinal groove C^6 nearly one-half the height of said groove. Said shoulder *f* may be provided by inserting a piece of flattened wire similar to that from which the valve is made, or it may, if preferred, be a solid part of the hard-rubber case, in which the groove is cut or otherwise formed. The point D^2 of the valve-wire finds a bearing at its outer end against the pen, at its inner end against the upper side of the ink-channel, and at a point about one-fourth of an inch from its outer end it also rests on the end of the piece which forms the lower side of the longitudinal groove, (see *d′*,) said piece projecting slightly upward, as shown in the several drawings. The outer end of the valve does not bend in the act of writing, its only function being to form a valve or cut-off, as at *m*, which shall automatically admit or exclude the supply of ink. The inner end of said wire, when reduced in width, acts as a spring to open the valve when the pen-nibs are raised in writing and pressure on the outer end of the valve-wire is removed, as in Figs. 2 and 4. d^2 is a bend in the valve. This bend is adapted to engage the cross-piece *g* and prevent the displacement of the valve. That part of the wire which bears at *d′* is practically the fulcrum on which the valve-wire oscillates when in use. The valve-wire, by a suitable right-angular bend, (at the point where it intersects the pin *g* and projection *f*,) passes downward between *f* and *g*, and thence by a similar bend into the ink-channel, as before described. When the pen B is in place in the holder, *f* and *g* prevent the valve-wire from

moving endwise, and, when not in operation, serve to guide the valve *m* upward to the position shown in Fig. 1, in which the bend first above mentioned engages the upper side of the mouth of the ink-channel and effectually cuts off the flow of ink. As the nibs of the pen are moved in the act of writing, the valve is opened and closed, assuming alternately positions shown in Figs. 1 and 5, a small quantity of ink being allowed to pass to the pen by each successive movement. The valve-wire may, if preferred, be a single piece of wire doubled, as shown in Figs. 1, 2, and 4, in which case the piece *f* would be dispensed with, and the pin *g* would be located near the bottom of the longitudinal groove, the lower limb of D^3 passing under said pin. The action of the outer end of the valve-wire is identical, whether formed of a single or double wire, the sole object of the narrowed end being to provide a spring to open the valve when the pen-nibs are raised.

I am aware that a feeder or ink-agitator composed of two flattened wires riveted together and extending into the reservoir is shown in Lewis' patent, No. 272,066, issued February 13, 1883, all of which state of the art is hereby disclaimed.

What I claim as my invention is—

In combination with the holder A, section C, and pen B, the valve D, having bearings and fulcrum, as hereinbefore described, and the spring end extending into the channel, the pin *g*, projection *f*, and the longitudinal groove, as and for the purpose specified.

JAMES T. GOODRICH.

Witnesses:

FRANK H. ALLEN,

EARL WARNER.