(No Model.)

W. H. BIRKMIRE.

FOUNTAIN RULING PEN.

No. 445,944. Patented Feb. 3, 1891.

Fig. 1.

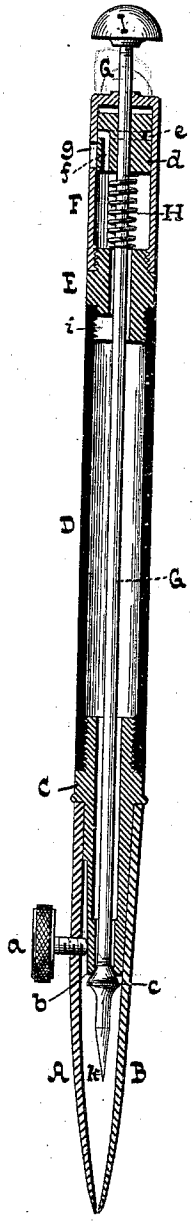


Fig. 3.

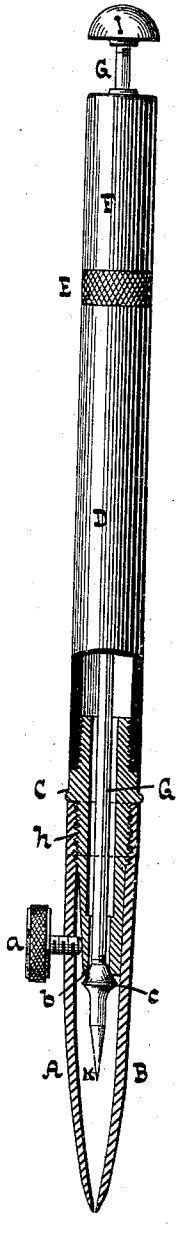
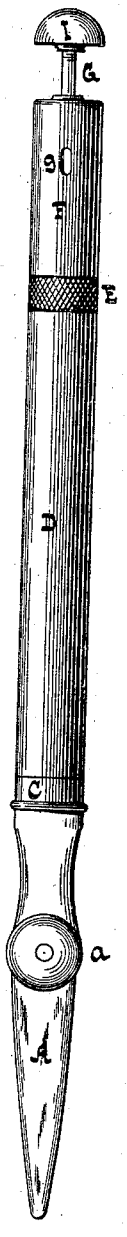


Fig. 2.



WITNESSES:

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM H. BIRKMIRE, OF NEW YORK, N. Y., ASSIGNOR TO EDWARD G. SOLTMANN, OF SAME PLACE.

FOUNTAIN RULING-PEN.

SPECIFICATION forming part of Letters Patent No. 445,944, dated February 3, 1891.

Application filed February 8, 1890. Serial No. 339,704. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. BIRKMIRE, a citizen of the United States, and a resident of New York, in the county and State of New York, have invented certain new and useful Improvements in Fountain Ruling-Pens, of which the following is a specification.

My invention relates to improvements in ruling or drawing pens; and it consists, essentially, in providing for this kind of pens an ink-reservoir, from which the ink may be supplied to the pen as required by means fully described in the following specification and illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section of the pen. Fig. 2 is an elevation of the same; and Fig. 3 is a longitudinal section, partly in elevation, of a modification of the same.

Similar letters refer to similar parts throughout the several views.

A and B are the blades of a ruling-pen.

C is an ink-nozzle, to which blades A and B are attached by suitable means, and which passes downward between the blades of the pen. In the example shown in Fig. 1 the blades of the pen are assumed to be soldered to the ink-nozzle, while in the example shown in Fig. 3 the upper ends of the blades A and B terminate in a ring *h*, with internal thread for screwing the blades to the ink-nozzle. The opening of the pen-blades is regulated by a screw *a* in the usual manner. The ink-nozzle C forms at its lower end a valve-seat *b*.

D is a tubular ink-reservoir with an internal screw-thread at its lower end for the reception of the upper threaded end of the ink-nozzle and at its upper end for the nipple E. This nipple has a hole through the center for the passage of the valve-rod G. Its lower screw end is partly cut away, as shown at *i*, so as to leave an opening for filling the reservoir when the nipple is partly unscrewed.

F is a tubular cap having a screw-thread connection with the nipple E. It has a hole at the top for the passage of the valve-rod G and an elongated air-hole *g*. The valve-rod G carries at its lower end the ink-valve *c*, and *k* is a projecting ink-guide, which may form part of the valve or of the valve-rod.

d is a piston attached to the valve-rod within the cap F. It is provided with an annular groove *e* and with a hole *f* extending from its lower face to the groove *e*.

H is a spring interposed between the nipple E and the piston *d*, forcing the latter up, together with the valve-rod, and holding the ink-valve *c* normally closed.

I is a button on the upper end of the valve-rod G.

To fill the ink-reservoir, the nipple E is partially unscrewed and the ink introduced through the part I, using a glass dropper. By pressing upon the button I the ink-valve *c* is opened and the desired quantity of ink admitted between the blades of the pen, while at the same time the annular groove *e* of the piston *d* comes opposite the air-hole *g*, admitting air at the top of the ink-reservoir. The valve-rod passing through the ink-nozzle keeps the ink-passage free from obstructions, which is very essential when india-ink or any kind of drawing-ink is used. It will be noticed that the blade B of the pen has that portion opposite to which the ink-valve moves made approximately parallel to the motion of the same, and the valve comes into close proximity to such portion of the blade, thereby preventing the ink from clogging at this part of the pen.

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

1. In a fountain ruling-pen, the combination, with the two pen-blades, of an ink-nozzle projecting downwardly between the pen-blades and provided with an outwardly-facing valve-seat, a tubular ink-reservoir to which the ink-nozzle is attached, and a valve-rod passing through the ink-reservoir and through the ink-nozzle and provided with an outwardly-opening valve and with a projecting ink-guide normally held closed by a spring, substantially as and for the purpose specified.

2. In a fountain ruling-pen, the combination of the pen-blades A and B, the ink-nozzle C, provided with valve-seat *b*, the tubular ink-reservoir D, nipple E, cap F, valve-rod G, with valve *c*, projecting ink-guide K, piston *d*, spring H, and button I, substantially as described.

3. In a fountain ruling-pen, the combination, with the reservoir and the ink-valve, of the blades A and B, the blade B having a portion extending parallel, or nearly so, to the motion of the valve, and the valve being located in close proximity to said blade, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 6th day of February, 1890.

WILLIAM H. BIRKMIRE.

Witnesses:
A. FABER DU FAUR,
W. H. BRISTOL.