

(No Model.)

D. W. LAPHAM.

FOUNTAIN PEN.

No. 376,778.

Patented Jan. 24, 1888.

Fig. 1.

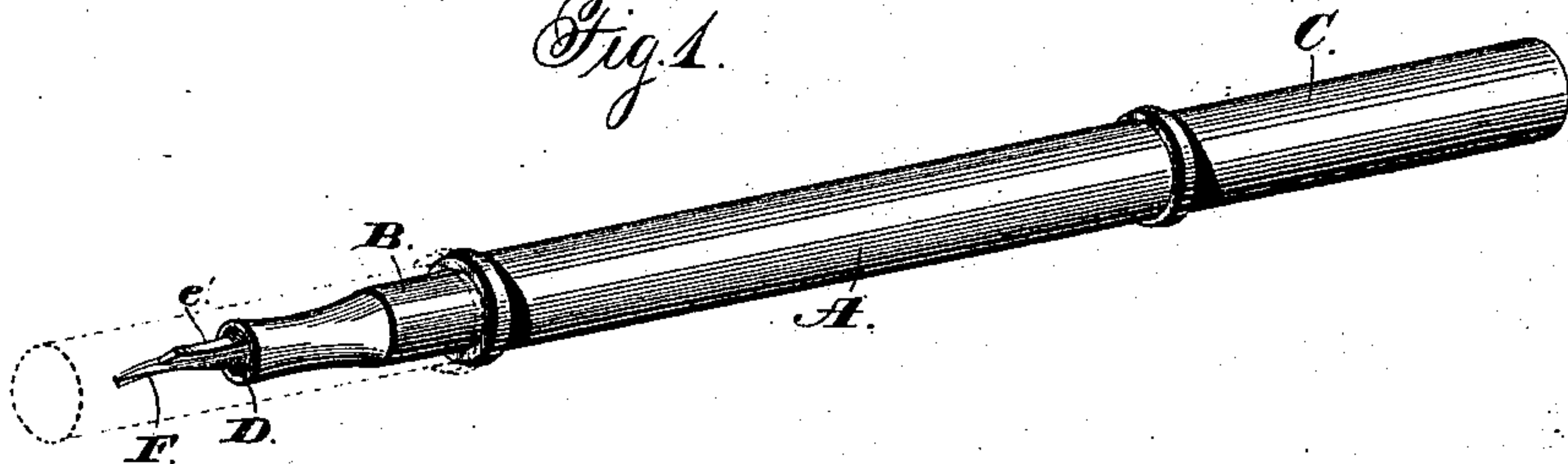


Fig. 2.

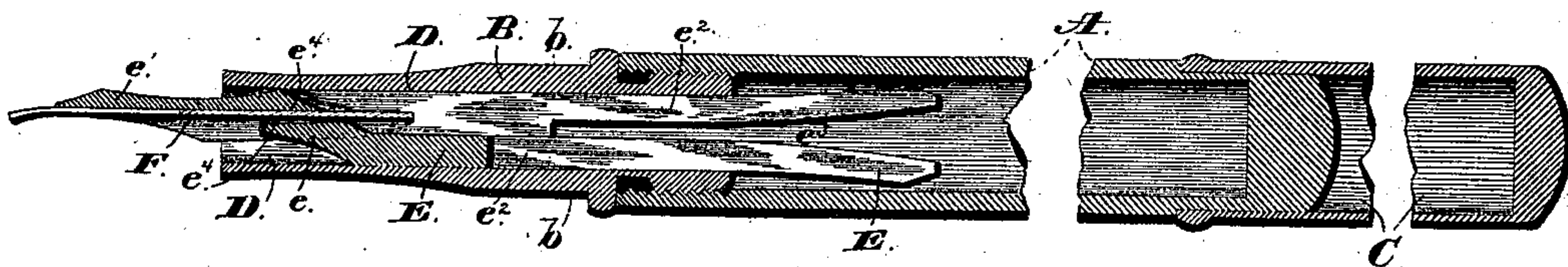


Fig. 3.

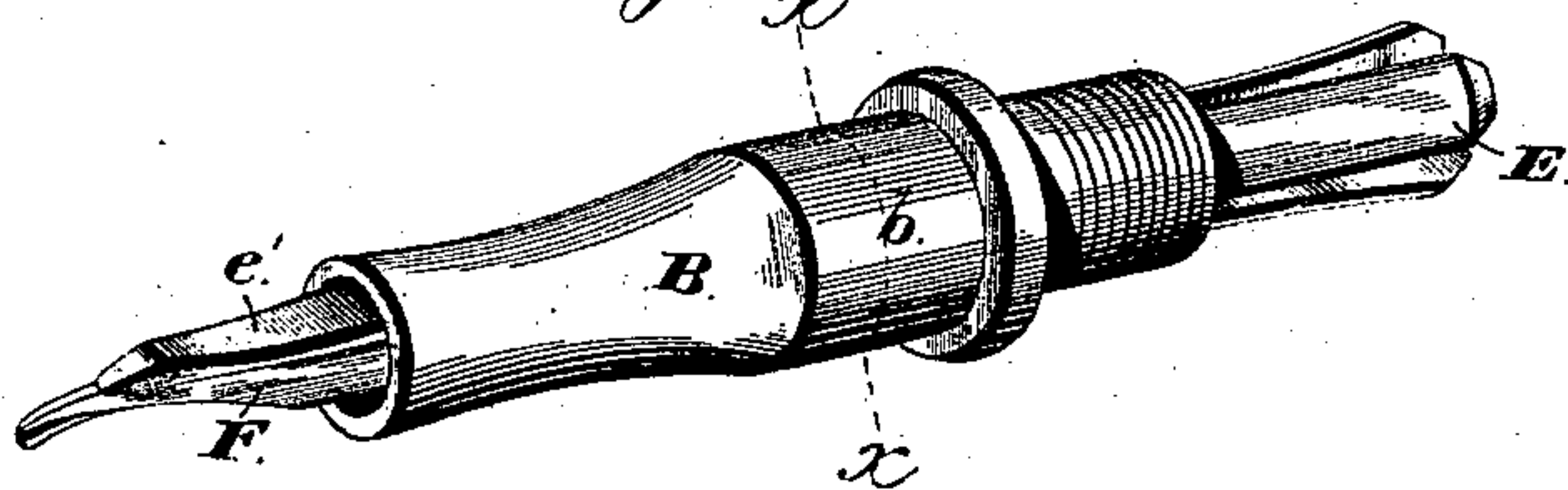


Fig. 4.

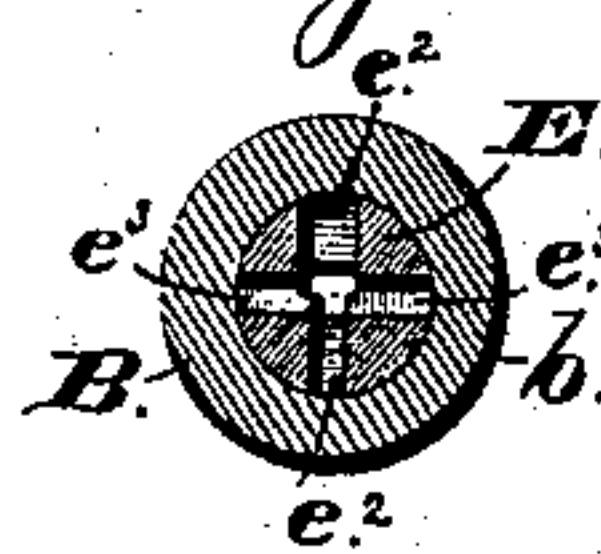


Fig. 5.

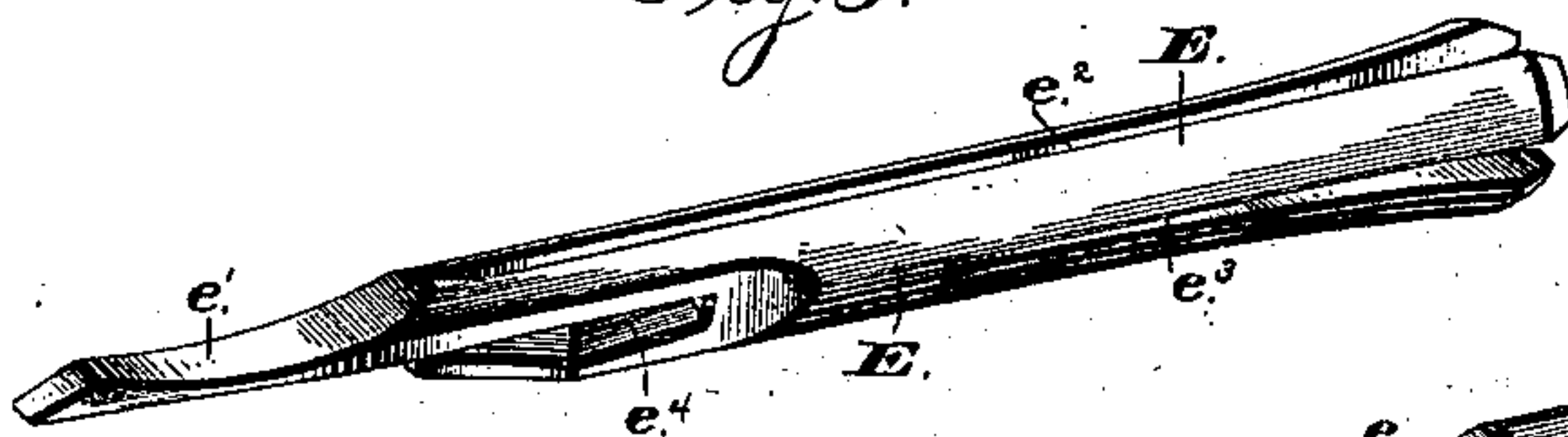
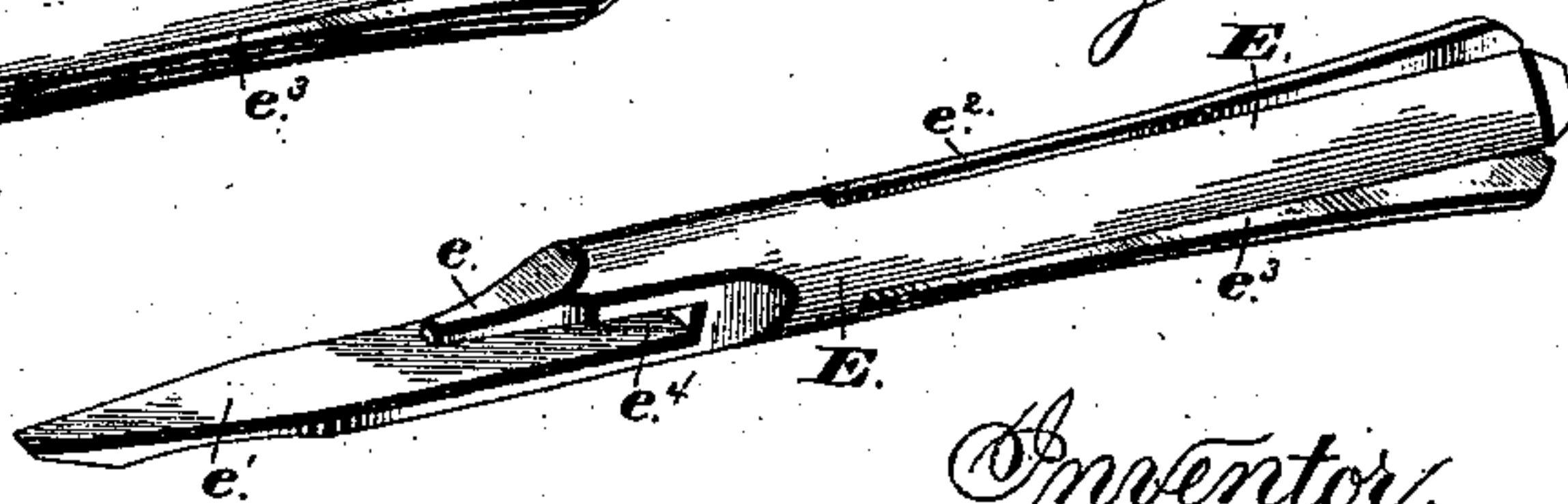


Fig. 6.



Witnesses:

Jas. C. Hutchinson.

Chas. J. Williamson.

Inventor.

D. W. Lapham

by Sprinkle and Russell
his attorney

UNITED STATES PATENT OFFICE.

DANIEL W. LAPHAM, OF BROOKLYN, NEW YORK, ASSIGNOR TO JOSEPHINE M. LAPHAM, OF SAME PLACE.

FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 376,778, dated January 24, 1888.

Application filed April 30, 1887. Serial No. 236,700. (No model.)

To all whom it may concern:

Be it known that I, DANIEL W. LAPHAM, of Brooklyn, in the county of Kings, and in the State of New York, have invented certain new and useful Improvements in Fountain-Pens; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 shows a perspective view of my pen; Fig. 2, a view of a central longitudinal section of the pen enlarged; Fig. 3, an enlarged detail perspective view of the mouth-piece or nozzle removed from the holder; Fig. 4, a view of a transverse section on line *xx* of Fig. 3; Fig. 5, a detail perspective view of the feed device removed from the nozzle; and Fig. 6, a similar view of the feed device, looking at the under side of the same.

Letters of like name and kind refer to like parts in each of the figures.

The object of my invention is to provide an improved fountain-pen in which, while the feeding of the ink to the pen-point is more certain, ready, and free than in fountain-pens as heretofore made, the danger of flooding is avoided and removed; and to this end my invention consists in the fountain-pen, and in the construction, arrangement, and combination of the parts thereof, as hereinafter specified.

In fountain-pens as heretofore made and put on the market the feeding of the ink to the pen proper or pen-point has been so imperfect or uncertain as to cause "skipping" or failure of the pen to mark, especially during the first strokes of its use at any time or where the feeding of the ink has been free, flooding has been liable to occur, necessitating very careful handling of the pen. These have been the vital objections to this class of pens as heretofore made.

With the object of providing a pen which can be handled and used freely and safely, as for business writing, and which will always be ready for use and will not "skip" even the first strokes, I have invented the pen which I will now proceed to describe at length.

In the drawings, A designates the main part or holder of the pen, which, as is usual

with fountain-pens, is made hollow and forms the ink receptacle or reservoir. Into the mouth or open end of this reservoir is screwed or otherwise fastened the nozzle or mouth-piece B, having the cylindrical portion *b* to fit the cap C when the latter is put over the pen-point, as indicated in dotted lines. Extending centrally through the nozzle B is the plain cylindrical opening or passage D, and fitting within such passage is the feed piece or plug E, of a peculiar construction.

The pen-point or pen proper, F, is a pen of the ordinary construction, as shown, and its shank is simply pressed into the lower end of the mouth-piece, so as to engage the opposite sides of the interior thereof. The feed piece or plug E is slotted or forked to embrace the upper and lower sides of the pen-point shank, as shown best in Figs. 2 and 5. It has the short prong or projection *e* engaging the under or concave side of the shank of the pen-point F, and the long tongue or prong *e'* overlapping said shank and projecting out over the same well down over the usual slit in the pen-point. This tongue *e'* is preferably thinned down, as shown, along its outer portion, so as to be quite flexible, and to bend easily upward as the pen-point is bent up in making the strokes in the process of writing.

The feed piece or plug E is preferably made of hard rubber or gutta-percha, as such material is not affected or corroded by the ink, and as the tongue *e'*, made on the piece of such material, has the desirable flexibility and elasticity. The inner or upper portion of the feed-piece extends well up into the reservoir, and is slit or slotted in two different planes at right angles to each. With the pen held horizontally with the top or convex side of the pen proper or pen-point upward one of these slits or slots, *e²*, is made in a vertical and the other, *e³*, in a horizontal plane. The latter slit or split does not extend as far toward the outer end of the feed-piece as the other.

At the upper side of the feed-piece E the split or slot *e²* is continued down toward the lower end of the piece until it intersects with the pen-point-receiving slot *e⁴* and extends some distance over the top of the pen-point shank. With the pen F in position and with

the tongue e' pressing upon the top of the pen-point shank the elongated opening formed by the said intersection of the slit e^2 with slot e^4 will be normally closed by said shank. Such construction and arrangement serve to effectually prevent flooding or the running of the ink down out of the reservoir over the pen-point F when the pen is not in use, as the only outward passage for the ink from the reservoir is through split or slit e^2 . The downward or outward extension of this split or slot does not and should not reach to the slit in the pen-point. If it did, a free and open channel would normally be left, as in pens heretofore made, from the reservoir to the slit in the pen-point, and flooding would take place. I therefore prefer to have the extension of slit or slot e^2 stop short of the slit in such point.

The splitting or slitting of the inner portion of the feed-piece in two planes, as described, leaves four flexible prongs projecting well into the reservoir for conducting the ink down therefrom. Such prongs are preferably spread apart somewhat, as shown in the drawings, so as to make the slits e^2 and e^3 larger at their inner or upper ends, and from there tapering downward and outward toward the pen-point. As I have found, when the slits are of this shape, the ink is best and most surely conducted from the reservoir and fed downward and outward to the pen-point.

By the action of capillary attraction the ink in the reservoir in contact with the four prongs on the feed-piece and with the larger ends of the slits will be drawn toward the narrower portions of the slits. There will then be a constant supply of ink from the reservoir to the outward end or extension of the slit e^2 , and consequently to the top of the shank of the pen-point.

With the pen not in use and the upper tongue, e' , on the feed-piece lying flat on the top of the pen-point shank the ink is prevented from running freely down and out over the pen-point, while a little creeps down between the tongue and the shank by capillary attraction. This is just enough to keep the slit in the pen-point moistened ready for use. With the tongue e' lying flat on the pen-point shank this capillary attraction is very slight and not such as to cause the ink to be drawn outward, so as to run off of the pen-point and flood.

When the pen is used and the pen-point is bent upward, as in making the strokes in writing, the tongue e' is sprung upward, so as not to lie flat on the pen-point shank, as before. This leaves space to be filled by more ink, which flows down over the point-shank. Such flow is permitted by the fact that because of the springing of the pen-point the tongue e' does not lie flat upon the shank, and consequently such shank does not close the opening from the end of the slit e^2 into the pen-slot e^4 , but opens it enough to admit outward passage of the ink to and along the pen-point shank.

With the feed-piece fitting the nozzle or mouth-piece, as described, the inner surface of the nozzle closes the upper side of the extension of the slit or split e^2 , which intersects with the pen-holding slot, thus making the slit-extension a channel and preventing any flow of ink along the top of the tongue e' .

As will be seen in the drawings, the top of tongue e' is concaved beyond the end of slot e^4 , and the feed-piece on its lower side is cut away at e^5 , thus leaving within the nozzle end an outward-flaring space around the feed-piece to collect and hold any ink that may flow down in excess of that needed for the pen when first used.

Having thus described my invention, what I claim is—

1. In a fountain-pen, in combination with the reservoir and the nozzle or mouth-piece, the pen-point in such nozzle, and the feed-piece projecting up into the reservoir, having the tongue extending down over the pen-point and having the slot extending from its inner end outward to a point in the tongue over the pen-point shank, substantially as and for the purpose specified.

2. In a fountain-pen, in combination with the reservoir and the nozzle or mouth-piece, the pen-point and the feed-piece having the tongue projecting out along the top of the pen-point, and provided with an ink-passage extending along the tongue to a point on the pen-point short of the slit therein, substantially as and for the purpose shown.

3. In combination with the ink-reservoir, the nozzle, and the pen-point, the feed-piece having the part projecting into the reservoir provided with an outwardly-tapering slit for the passage of the ink, substantially as and for the purpose set forth.

4. In combination with the ink-reservoir and the pen-point-holding piece, the feed-piece having its portion extending into the reservoir-split and having a passage from this split to the pen-point, substantially as and for the purpose shown and described.

5. In combination with the ink-reservoir and the nozzle on the same, the feed-piece in the nozzle split longitudinally on two planes substantially at right angles to each other, substantially as and for the purpose specified.

6. In combination with the ink-reservoir and the nozzle thereon, the pen-point, the feed-piece having the tongue extending down along the pen-point and having its body slit or split longitudinally on two planes, and one of the slits extended down along the tongue, substantially as and for the purpose shown.

7. In combination with the nozzle, the feed-piece fitting therein, having at its outer end the pen-point-receiving slot, and the tongue to engage the top of the pen-point and having its inner portion split, so that the split communicates with the pen-point-receiving slot, substantially as and for the purpose set forth.

8. In combination with the nozzle or mouth-

piece, the feed-piece provided with a tapering slit or slot extending from its inner end, and having on its outer end the pen-point-receiving slot intersecting the forward or outward end of the slit in the piece, and the tongue to engage the top of the pen-point shank, substantially as and for the purpose shown and described.

9. In combination with the nozzle, the longitudinally-split feed-piece fitting therein, having the tongue to engage the top of the pen-point and the slot to receive the pen in communication at its upper side with a split in the feed-piece, substantially as and for the purpose specified.

10. The feed-piece for use in fountain-pens, consisting of the longitudinally-split body provided with the pen-point-receiving slot in communication with the split in the body of the piece, and the tongue for engaging the top of the pen-point, substantially as and for the purpose shown.

11. The feed-piece for use in fountain-pens, having the tongue for engaging the top of the pen-point, the point-receiving slot, and the longitudinal tapering slot or slit communicating with the pen-receiving slot, substantially as and for the purpose set forth.

12. The feed-piece for use in fountain-pens, having the pen-point-receiving slot and the tongue to extend along the pen-point, and having its main and inner portion split in two different planes, and one of the splits in communication with pen-point-receiving slot, substantially as and for the purpose shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 27th day of April, 1887.

DANIEL W. LAPHAM.

Witnesses:

T. MAYNARD,
WM. F. PITKIN.