

No. 750,546.

PATENTED JAN. 26, 1904.

F. M. KEGRIZE.
FOUNTAIN PEN.

APPLICATION FILED APR. 16, 1903.

NO MODEL.

Fig. 1.

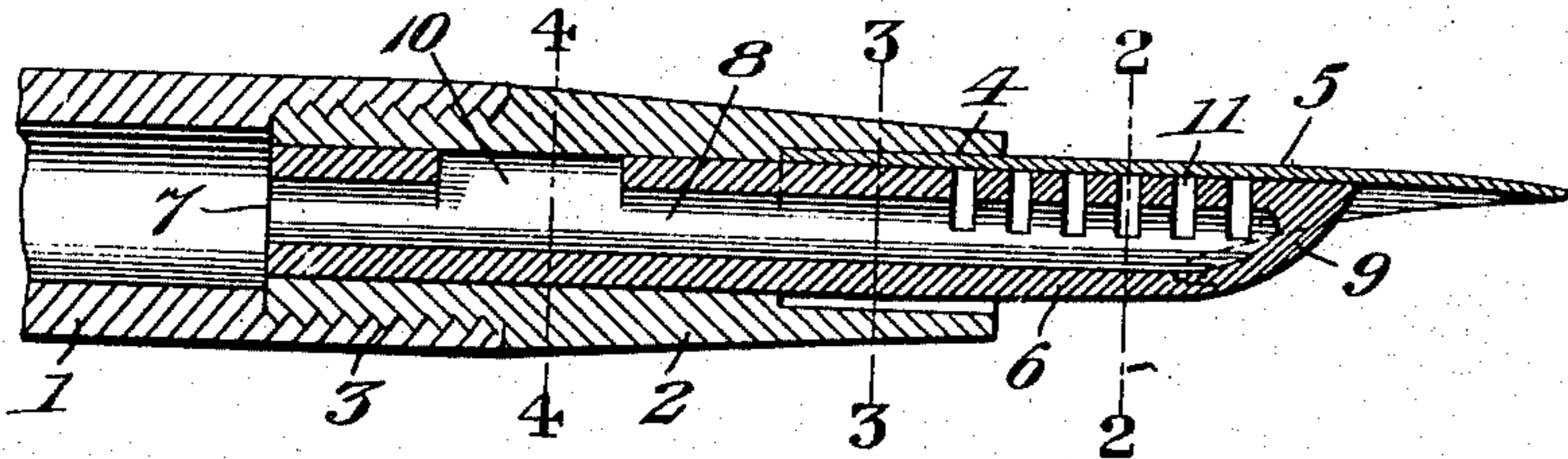


Fig. 2.

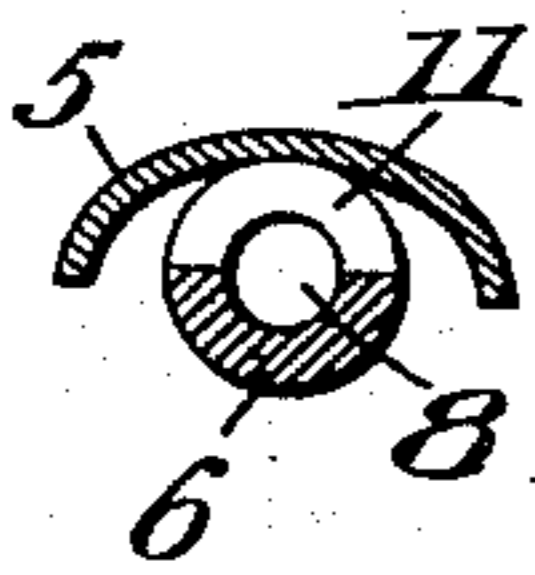


Fig. 3.

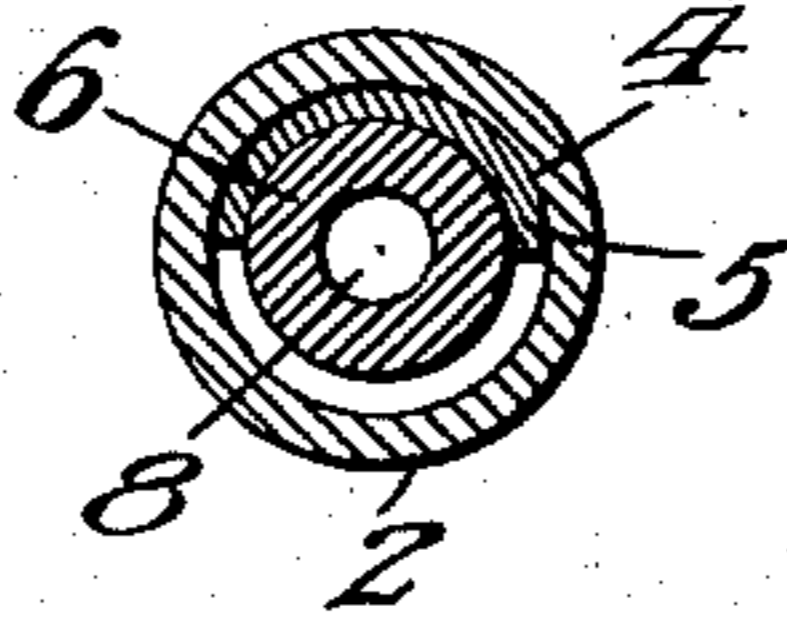


Fig. 4.

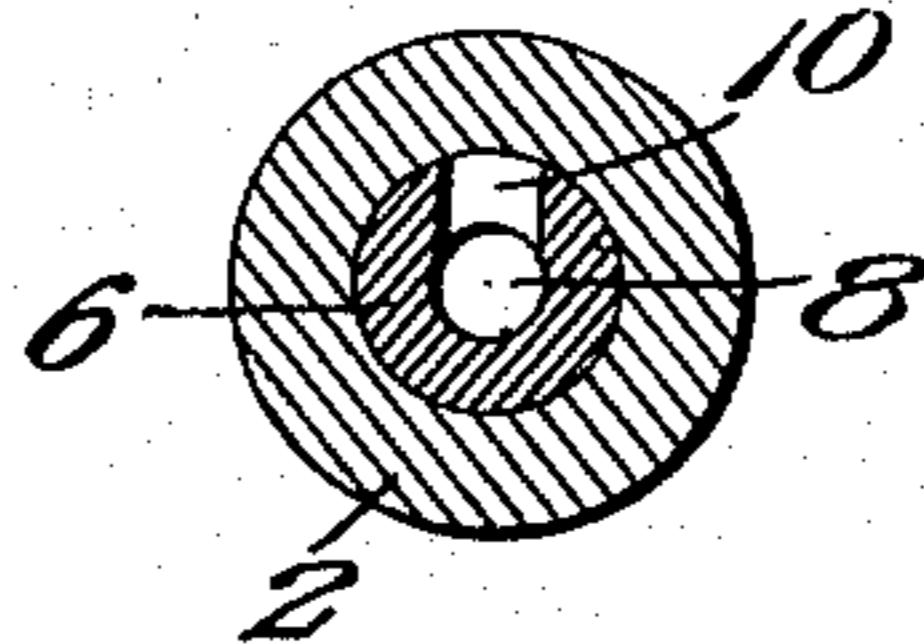


Fig. 5.

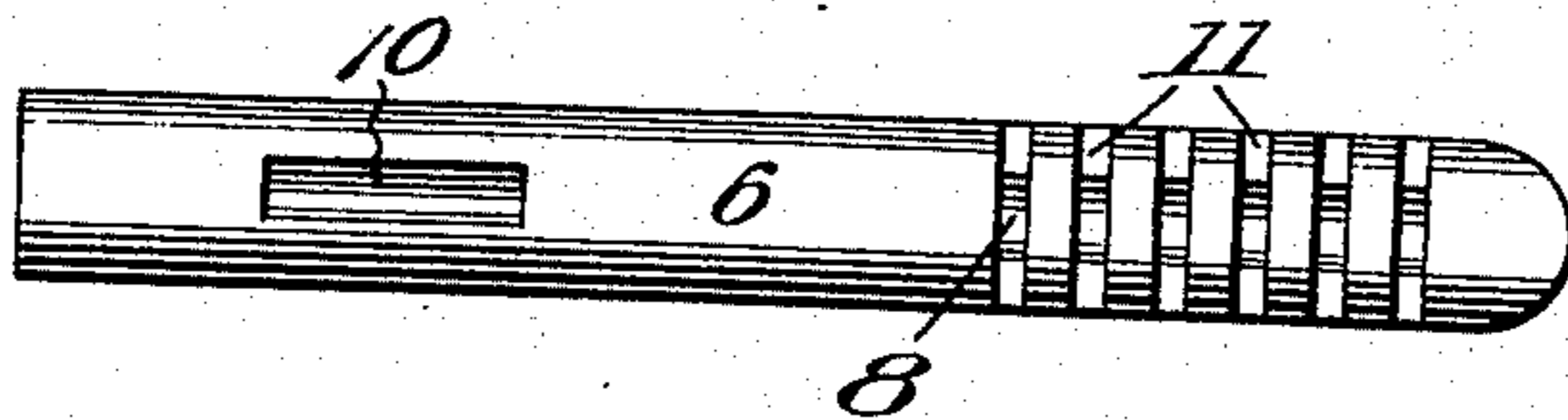


Fig. 6.

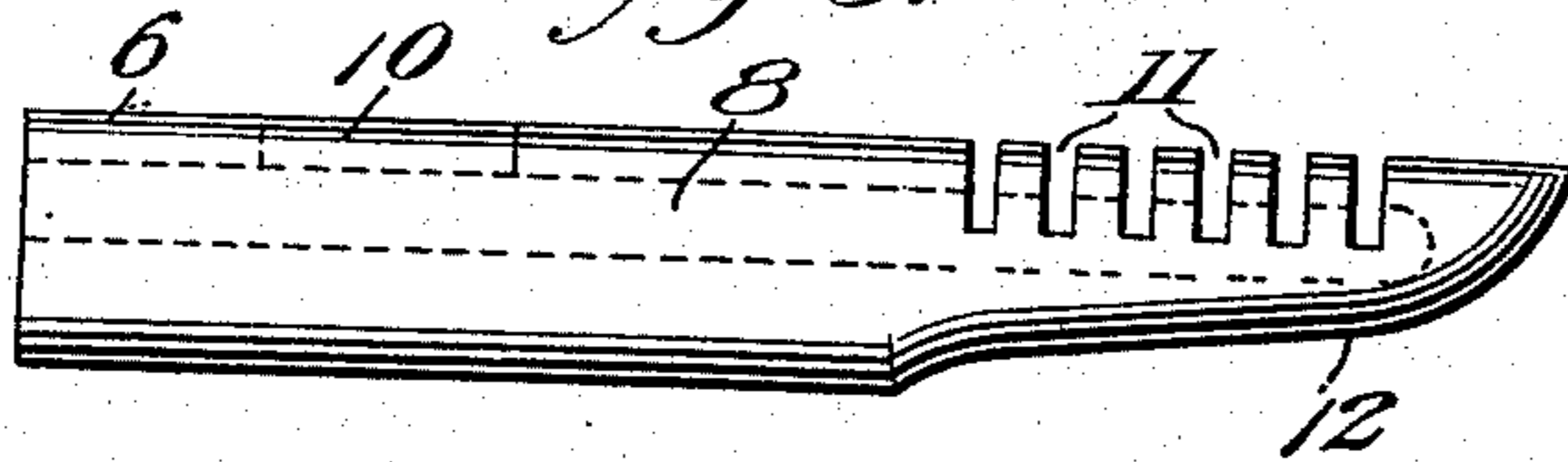
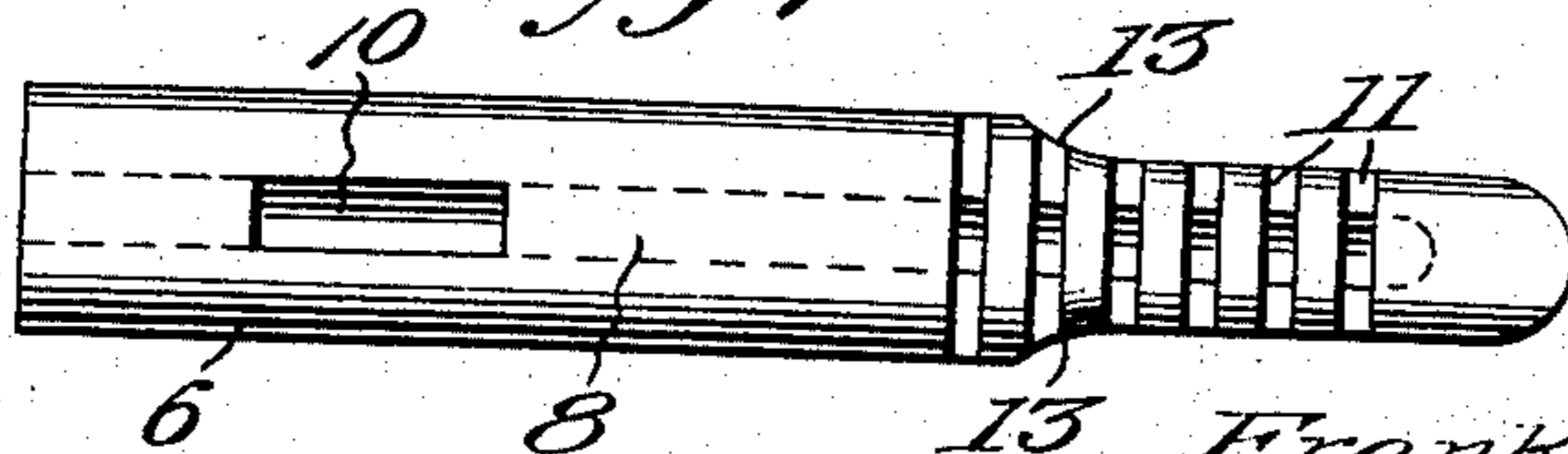


Fig. 7.



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FRANK M. KEGRIZE, OF PHILADELPHIA, PENNSYLVANIA.

FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 750,546, dated January 26, 1904.

Application filed April 16, 1903. Serial No. 152,956. (No model.)

To all whom it may concern:

Be it known that I, FRANK M. KEGRIZE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Fountain-Pen, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to fountain-pens, and refers particularly to the ink-feed or device for feeding the ink in the desired quantity to the pen.

The object of the present invention is to provide a self-regulating tubular ink-feed for fountain-pens which will convey the ink from the pen barrel or reservoir to the point or nib of the pen and deliver the ink in a desired quantity to the pen and distribute the same and also automatically retard any excessive flow of ink, so that the pen while held in the proper position for writing is supplied with ink in proportion to the amount of writing done, and any excessive flow of ink will be prevented automatically by the action of the feed device and also the dropping of ink from the nib of the pen prevented.

With the above and other objects in view the invention consists in the novel construction, combination, and arrangement of parts, as hereinafter fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a central longitudinal section through a sufficient portion of a fountain-pen to illustrate the application of the present invention thereto. Fig. 2 is a cross-section taken on the line 2 2 of Fig. 1. Fig. 3 is a cross-section on the line 3 3 of Fig. 1. Fig. 4 is a cross-section on the line 4 4 of Fig. 1. Fig. 5 is a top plan view of the tubular feed shown in Fig. 1. Fig. 6 is a side elevation of a tubular feed similar in principle to that shown in the previous figures, but of slightly different form and larger in size. Fig. 7 is a top plan view of the tubular feed shown in Fig. 6.

Like reference-numerals designate corresponding parts in all figures of the drawings.

At the present time inks are made thinner or of less density and contain less solids than formerly, and much objection and inconvenience has been experienced in the use of foun-

tain-pens by reason of the fact that they are not well adapted for the use of thin ink, which has a tendency to flow too rapidly and accumulate on the pen and finally drop from the nib or writing-point thereof. The present invention is designed with special reference to overcoming the objection just referred to, and its aim is to provide an ink-feed which will automatically retard any excessive flow of ink and deliver the same to the pen in a quantity proportionate to the quantity being used by the writer without liability of the ink dropping from the pen-point.

Referring to the drawings, 1 designates the main body or barrel of an ordinary fountain-pen, and 2 the end section thereof, which is removable from the barrel 1, as shown at 3, and is recessed at its outer end, as shown at 4, to receive a suitable pen-point 5.

The present invention resides in the ink-feed, which is made in the form of a tube 6 of any desired length, closed at its outer end and open at its inner end, the ink entering the tubular feed at the point 7. The longitudinal ink-passage 8 extends nearly the entire length of the feed and is closed at its outer end, as shown at 9.

At a point intermediate the ends of the tubular feed the longitudinal ink-passage 8 is provided with a lateral offset enlargement or extension 10, or, in other words, said longitudinal ink-passage is widened or increased in size at an intermediate point, as shown at 10, the object of which will hereinafter appear.

At or near the outer end the tubular feed 6 is provided with a plurality of cross-ducts consisting of slits or kerfs extending transversely across the upper side of the tube 6 and extending from the upper surface thereof down about half-way the depth of the longitudinal ink-passage 8, as clearly shown in Figs. 1, 2, and 6, thereby providing a number of eduction-ports through which the ink may pass from the main passage 8 to the under surface of the pen 5, which lies directly in contact with the upper side of the tubular feed. The cross-ducts 11 may be of any number, the outer one being arranged just back of the closed end of the passage 8 and the inner cross-duct being located just within the extremity of the end section 2 of the pen.

The number of intervening cross-ducts may be increased or diminished at the will of the manufacturer.

In Fig. 1 the outer end of the tubular feed is simply rounded off from the lower side, as shown at 9. In large pens an ogee form may be given to the outer portion of the tubular feed, as shown at 12 in Fig. 6, and the extended or projecting portion of said tubular feed may also be reduced or made narrower, as shown at 13 in Fig. 7. The size of the tubular feed will of course vary in proportion to the size of the pen and holder in connection with which it is used.

In operation when the pen is held in position for writing, with the pen-point downward, ink flows into and fills the longitudinal passage 8 and also finds its way into the cross-ducts 11 and ultimately to the pen and writing-nib. By actual test it has been found that by having the outer end of the longitudinal ink-passage 8 closed, as at 9, the ink through atmospheric pressure will remain unchanged in the passage as long as the pen lies in a horizontal position; but as soon as the closed end is raised sufficiently toward the vertical a bubble of air will enter the tube, passing along the upper surface thereof, and will advance until it enters the widened or enlarged offset portion 10 of said ink-passage, where it will be stopped by the obstruction formed by the sudden narrowing again of said passage. This action will allow an equal proportion of liquid (the heavier body) to escape from the open end of the tube, when the same operation will be repeated until the widened or enlarged portion of the passage becomes filled with air, whereupon the bubble, constituting a portion of the entire quantity of air contained in the enlarged portion of the passage, through the compression created will overcome the obstruction and advance to the closed end of the passage, taking the place of the ink, which is in the meantime approaching the end of the tube. The result is that the gravity of the ink is slightly decreased and the approach of the ink toward the cross-ducts hindered or retarded, thereby preventing too large a quantity of ink from accumulating under the pen, which will ultimately result in the ink dropping from the nib of the pen.

By the means above described the fault which is now present in most fountain-pens as heretofore constructed is overcome, the cross-ducts in the outer end of the upper surface of the tubular feed serving the purpose of little dams which hold back the ink and retain the same in the ducts and do not allow a surplus quantity of ink to accumulate around the pen between the end of the nib and the extreme point of the writing end of the pen. At the same time a sufficiently free flow of ink is provided and the feed is made self-regulating, so that the ink is supplied to the pen only as rapidly as needed.

I do not desire to be limited to the details of construction and arrangement illustrated and hereinabove described, as it will be apparent that the location and size of the enlargement of the longitudinal ink-passage may be varied and also that the size, number, and arrangement of the cross-ducts in their relation to the longitudinal ink-passage and to the pen may also be varied without departing from the principle of the invention hereinabove set forth. I therefore reserve the right to make such changes as fall within the scope of the appended claims.

Having thus described the invention, I claim as new—

1. A feed for fountain-pens and the like consisting of a tube embodying a longitudinal ink-passage, and inlet and outlet openings communicating therewith, said passage being enlarged or widened at a point between the inlet and outlet openings.

2. A feed for fountain-pens and the like comprising a longitudinal ink-passage closed at one end and open at the other, said passage being provided intermediate its ends with an offset and also provided near its closed end with an eduction-port.

3. A feed for fountain-pens and the like comprising a tube having a longitudinal ink-passage open at the inner end and closed at the outer end, the outer end of the feed being provided with one or more cross-ducts for conveying ink from the longitudinal passage to the pen which lies in contact with the feed.

4. A feed for fountain-pens and the like comprising a tube having a longitudinal ink-passage closed at one end and open at the other, said tube being provided near its closed end with a plurality of cross-ducts leading from the outer surface of the tube into the longitudinal ink-passage.

5. A feed for fountain-pens and the like comprising a tube closed at one end and open at the other, said tube being also provided adjacent to its closed end with a plurality of cross-ducts consisting of kerfs extending from the outer surface of the tube approximately half-way through the bore of the tube.

6. A feed for fountain-pens and the like consisting of a tube closed at one end and open at the other, the bore or passage in the tube being enlarged or widened at a point intermediate the ends thereof, and the tube being provided adjacent to its closed end with a plurality of cross-ducts in the form of kerfs leading from the outer surface of the pen inward and communicating with the bore or passage.

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

FRANK M. KEGRIZE.

Witnesses:

WM. H. COOK,
H. G. BARBIER.