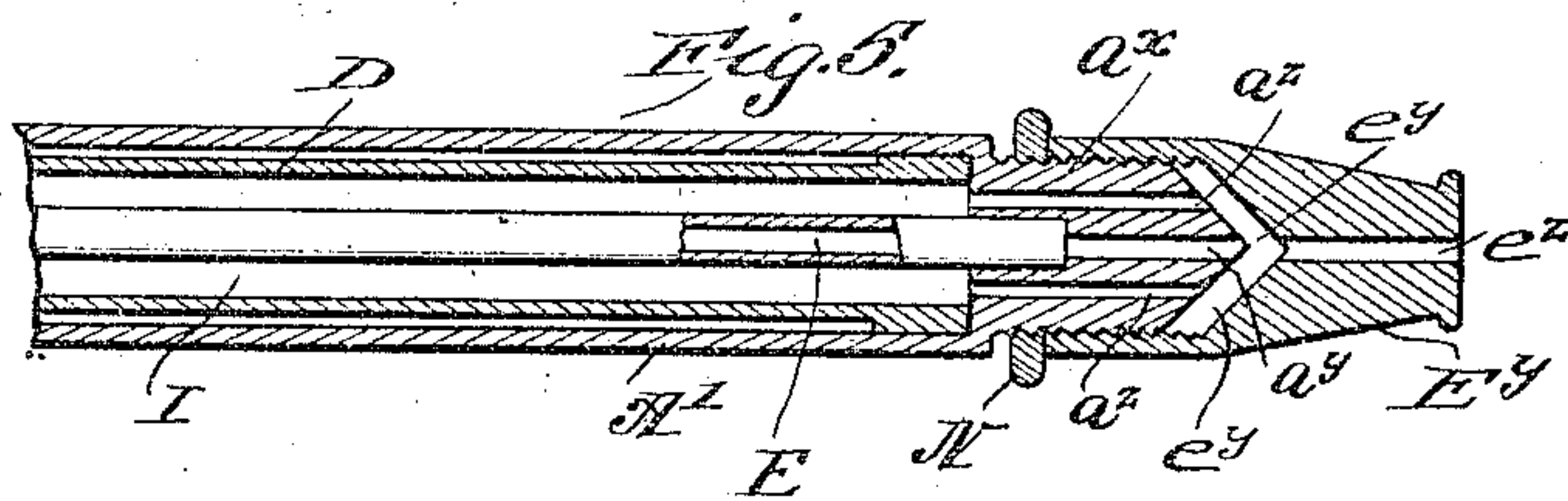
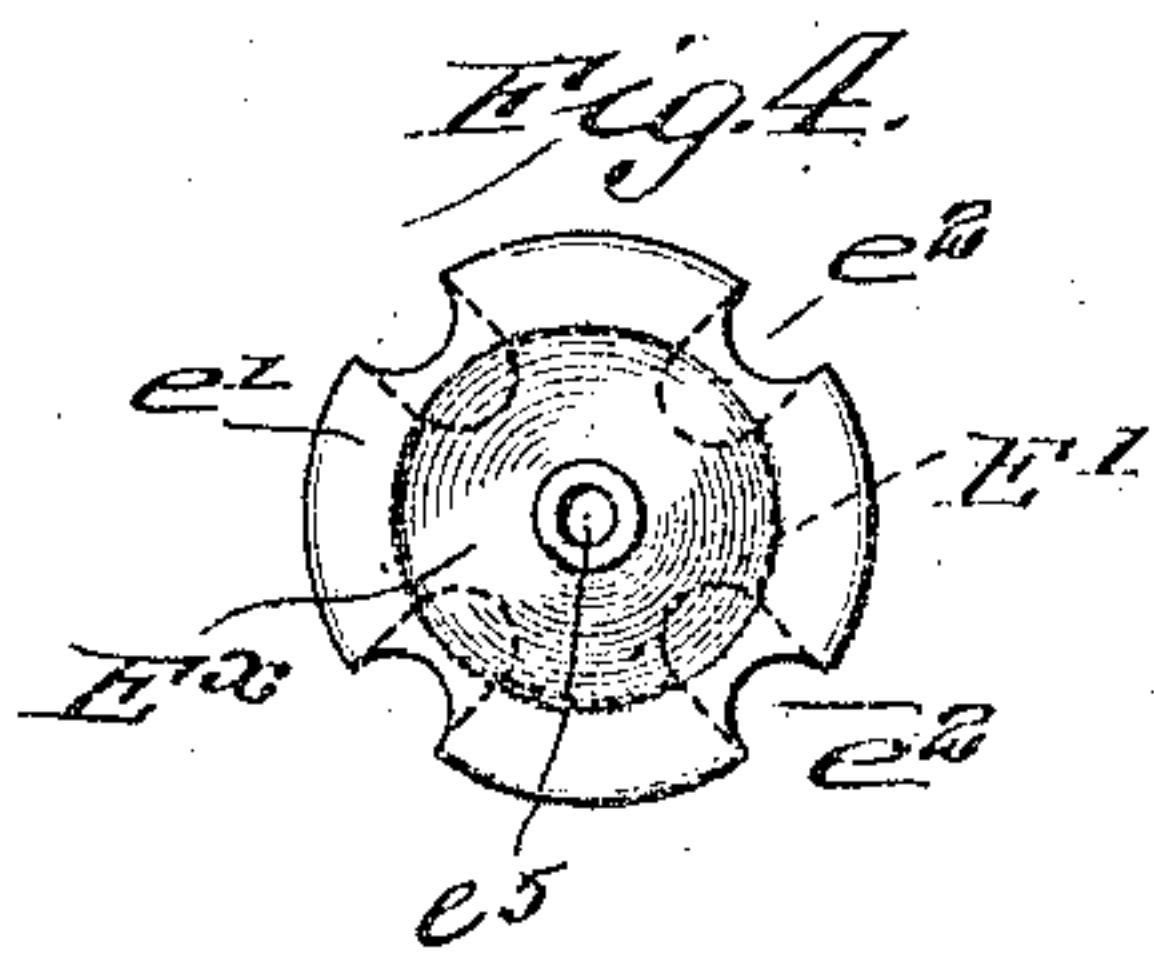
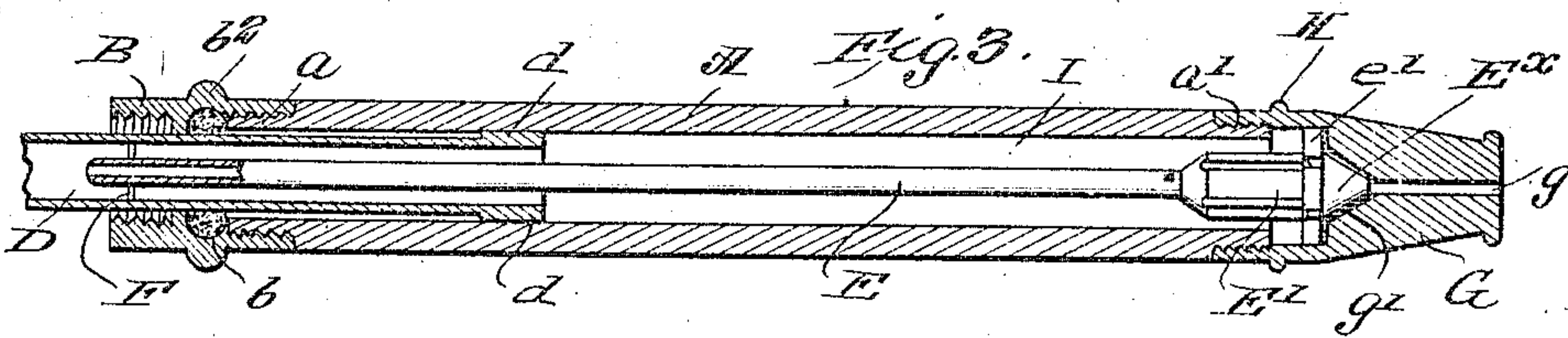
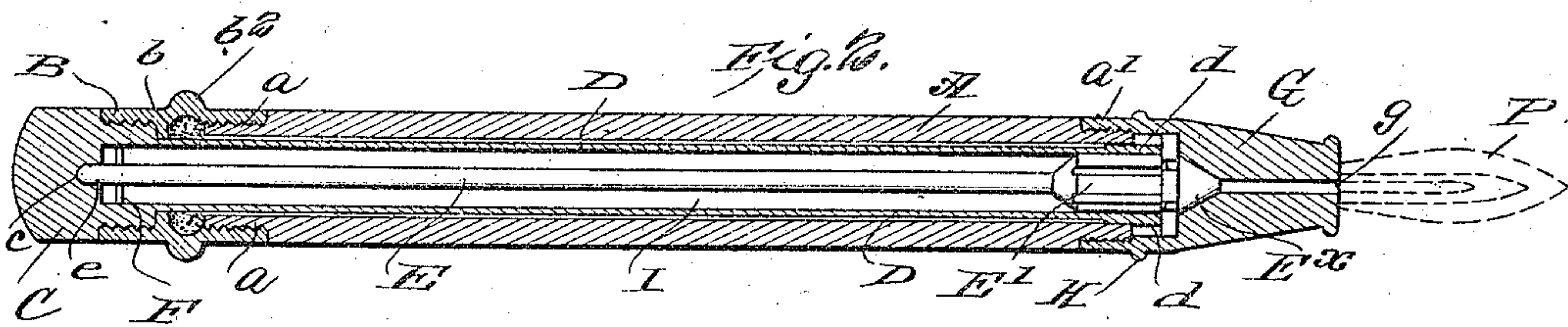
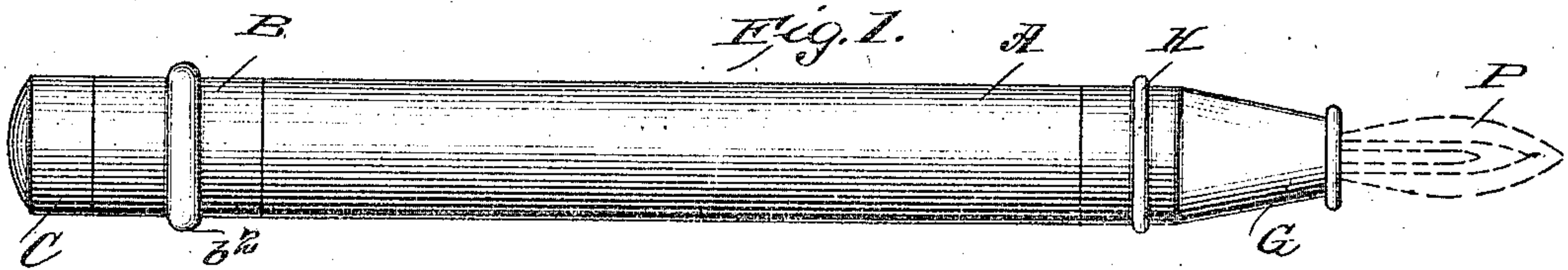


M. S. OLSEN.
 FOUNTAIN PEN.
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983,165.

Patented Jan. 31, 1911.



WITNESSES:
E. M. Callaghan
L. A. Stanley

INVENTOR
 MATTHEW S. OLSEN
 BY *Munn & Co.*

ATTORNEYS

UNITED STATES PATENT OFFICE.

MATTHEW S. OLSEN, OF HARVEY, NORTH DAKOTA.

FOUNTAIN-PEN.

983,165.

Specification of Letters Patent.

Patented Jan. 31, 1911.

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To all whom it may concern:

Be it known that I, MATTHEW S. OLSEN, a citizen of the United States, and a resident of Harvey, in the county of Wells and State of North Dakota, have made certain new and useful Improvements in Fountain-Pens, of which the following is a specification.

My invention relates to self-fillable non-leakable fountain pens, and it consists in the constructions, combinations and arrangements herein described and claimed.

An object of my invention is to provide a fountain pen having a simple and convenient means for filling the pen which will accomplish the filling operation rapidly.

A further object of my invention is to provide a device which is absolutely non-leakable when carried in the pocket, and in which the flow of ink may be readily started.

A further object of my invention is to provide a pen in which the flow of ink may be adjusted to suit the requirements of the user.

A further object of my invention is to provide a device having few parts and of comparatively small cost of manufacture.

A further object of my invention is to provide a pen with a larger capacity for ink than usual.

Other objects and advantages will appear from the following specification, and the novel features of the device will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawings in which:

Figure 1 is a side view of the assembled parts constituting the barrel. Fig. 2 is a longitudinal section through the device shown in Fig. 1. Fig. 3 is a similar section showing the inner cylinder pulled out for filling the pen. Fig. 4 is an end view of the device, the feed end of the pen being removed, and Fig. 5 is a sectional view showing a modified form.

Referring now more particularly to Fig. 2, I have shown therein an outer cylinder A which constitutes the main portion of the barrel. This cylinder is threaded at both ends. On the end a is secured a sleeve B having an inwardly extending flange b and an outwardly extending flange b^2 . The sleeve B is also threaded internally to receive the threaded end of a cap C. The latter is secured to an inner cylinder D which extends through the cylinder A and is pro-

vided with a slightly enlarged end d which fits snugly to the interior of the cylinder A.

Centrally disposed of the cylinder D is a tube E whose end e extends into a recess c when the cap C is screwed into the sleeve B. The pipe E is provided with a guide member F which is designed to center the pipe within the cylinder. The opposite end of the pipe E is provided with an enlarged head F^1 having a circular flange e^1 provided with feed openings e^2 and terminating in a conical valve member E^x , having a central passage e^3 therethrough communicating with the interior of the pipe E.

Adapted to be screwed to the end a^1 of the barrel A is a feed cap G provided with a central opening g and having a recess g^1 arranged to seat the valve member E^x .

The screw cap G is provided with a flange H for limiting the position of a cap (not shown) which may be placed over the pen point P when the device is carried in the pocket.

From the foregoing description of the various parts of the device the operation thereof may be readily understood. With the pen assembled as in Fig. 2 the operation of filling it is accomplished as follows: The cap C is unscrewed from the sleeve B and is pulled outwardly, the end of the screw cap G being first inserted in an ink-well. The movement of this cap C and the cylinder D causes the valve E^x to unseat so as to allow the ink to flow through the opening g into the ink space I surrounding the tube E. The movement of the head e^1 is limited by coming in contact with the end of the barrel A. It will be observed, however, that the openings e^2 extend radially toward the center (see Fig. 4) and that they are, therefore, not closed by the end of the barrel. Now when the cap C and the cylinder D are pushed inwardly again the air escapes through the tube E and through the opening g with which the tube E communicates. The valve E^x , however, reseats itself and prevents the ink from escaping. If the pen has not been filled by one stroke, other strokes are made until the ink is also forced out through the central tube E into the ink well. When this is accomplished the cap C may be screwed into the sleeve B until the valve E is forced to seat itself. The ink in the pen cannot possibly escape since the end of the pipe E is closed and the valve E^x is also closed. Now when it is desired to use

the pen the cap C is unscrewed, one-half to two turns being made. Since the cylinder D is secured to the cap C, the end of the cylinder will be withdrawn from the head e^1 , which unseats the valve E^2 and permits the ink to flow through the feed opening g , the feed of the ink being regulated by the amount the cap C is turned. The shoulder or flange b on the sleeve B prevents the inner cylinder D from being withdrawn entirely from the barrel by the engagement of the flange with the head d , and also serves to hold packing in cavity of flange b^2 , in order to make the joint perfectly tight around the cylinders D.

In Fig. 5 I have shown a modified form in which the outer cylinder A^1 is provided with a threaded end A^2 having the central feed opening A^3 and the side feed openings A^4 . The head a^x is tapered as shown in the drawings. A screw cap E^y is provided having a conical recess e^y and a central feed opening e^z . The cap is screw threaded to engage the head a^x . A locking ring or nut N is provided which also screws on the head a^x . The operation of this form is similar to that of the other. The pen is filled by pulling the cylinder D outwardly and sucking up the ink through the central opening e^z in to the ink space I, the screw cap E^y being first screwed down firmly against the head a^x thereby closing the side feed openings a^z while filling the pen. In order to keep all the ink from being ejected into the bottle, when the cylinder D is forced inwardly, the barrel A^1 is given a few turns to close the passages e^z . Now, when the tube T is pushed in, part of the ink will be forced out of the central tube E, but the ink space I will be filled with ink. The feed of the device is regulated by setting the nut, against which the screw cap E^y bears, at different points, so as to provide inclined feed openings e^z of different size. By turning the nut so that the cap may engage the head, the feed openings a^z may be closed

entirely thereby absolutely preventing the leakage of the ink.

I claim:

1. In a fountain pen, an outer cylinder, an inner cylinder slidably disposed therein, a screw cap arranged to be secured to said outer cylinder and provided with a feed opening, a valve arranged to close said feed opening, a hollow pipe centrally disposed within said inner cylinder and adapted to communicate with said feed opening, a second screw cap secured to said inner cylinder at one end thereof, and a sleeve secured to said outer cylinder and adapted to be secured to said second named screw cap.

2. In a fountain pen an outer cylinder, an inner cylinder slidably disposed therein, a screw cap arranged to be secured to said outer cylinder and provided with a feed opening, means for closing said feed opening, a hollow pipe centrally disposed within said inner cylinder and adapted to communicate with said feed opening, a closure for the end of said cylinder and a screw cap for securing said closure to said outer cylinder.

3. In a fountain pen an outer cylinder, an inner cylinder slidably disposed therein, a screw cap arranged to be secured to said outer cylinder and provided with a feed opening, a valve for closing said feed opening, a hollow pipe centrally disposed within said inner cylinder and adapted to communicate with said feed opening, and a closure for the end of said inner cylinder.

4. In a fountain pen, an outer cylinder, an inner cylinder slidably disposed therein, a screw cap arranged to be secured to said outer cylinder and provided with a feed opening, a valve for closing said feed opening, and an air tube for permitting the escape of air when the inner cylinder is moved.

MATTHEW S. OLSEN.

Witnesses:

JNO. L. BLANCHI,
RUTH BOANT.