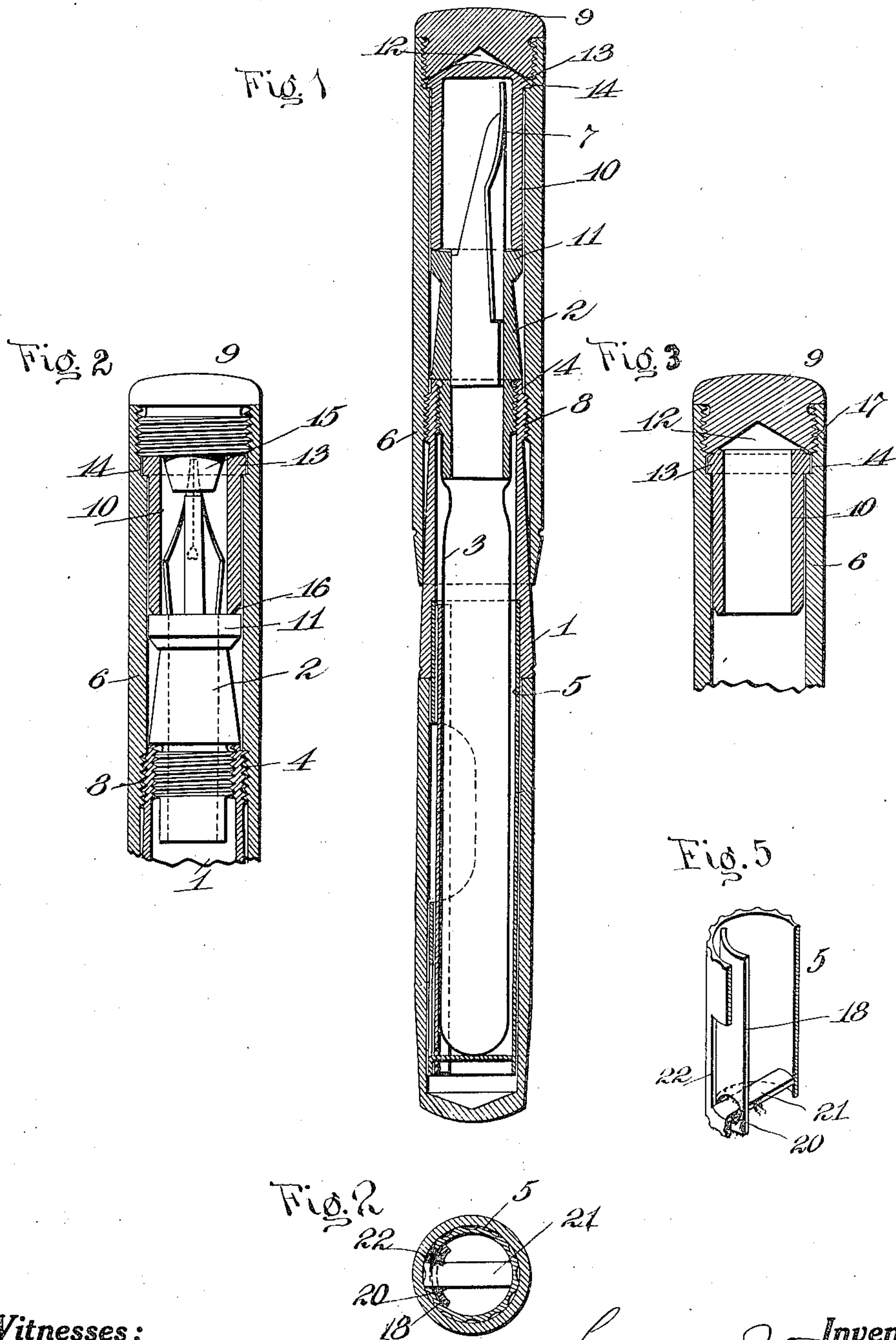


L. J. FARRELL.
 FOUNTAIN PEN.
 APPLICATION FILED MAY 4, 1910.

999,440.

Patented Aug. 1, 1911.



Witnesses:
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UNITED STATES PATENT OFFICE.

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FOUNTAIN-PEN.

999,440.

Specification of Letters Patent.

Patented Aug. 1, 1911.

Application filed May 4, 1910. Serial No. 559,334.

To all whom it may concern:

Be it known that I, LAWRENCE J. FARRELL, a citizen of the United States, residing in Jersey City Heights, Hudson county, State of New Jersey, (post-office address No. 438 Central avenue, Jersey City Heights, Hudson county, New Jersey,) have invented a certain new and useful Improvement in Fountain-Pens, of which the following is a specification.

The object I have in view is the production of a device to prevent leaking while not in use, particularly while being carried in the pocket, and to do away with expensive, complicated and cumbersome devices heretofore used for this purpose. This and further objects are more fully set forth in the following specification and accompanying drawings:

Figure 1 is a longitudinal section of a fountain pen embodying my said invention. Fig. 2 is a section of a modification of a portion of my invention. Fig. 3 is a section of another modification of my invention.

In all of the several views, the same parts are designated by the same reference characters.

In carrying out my invention I provide the usual cylindrical barrel 1, which carries the pen support 2, and surrounds and protects the reservoir 3. The pen support is secured to the barrel by being screwed into the latter by the screw threads 4. The reservoir 3 is in the form of a flexible, elastic, cylindrical envelop, preferably made of soft rubber, and lies within a cylindrical extension 5 of barrel 1, which latter is preferably made of hard rubber or other suitable substance, and the cylindrical extension 5 is preferably made of sheet metal or other suitable material. A cap 6 surrounds the pen support and the pen proper 7, and protects the latter and also prevents leaking when not in use. The cap is shown as having a body portion secured to the barrel 1 by screw threads 8. The upper end of the cap is covered by a tip 9, which is shown as screwed into the cap. So much of the invention described, except the tip, is old and well-known, but I am not aware that it has been before suggested to make the cap with a separate tip screw threaded into it.

The first portion of my invention resides in the means to prevent leakage of ink when the pen is not in use and the cap is in place.

This means is as follows: A cylindrical thimble 10 lies within the cap and surrounds the pen proper. The lower edge of the thimble (assuming the device to be in the position shown in Fig. 1) rests upon a flange 11 of the pen support 2. The upper face of the pen support is shown as dished, or slightly concave, but the lower edge of the thimble is on a plane. When the thimble is resting upon the flange, the point of contact is at the periphery. It is apparent that if the materials of the thimble and pen support are sufficiently elastic,—which will be such if made of hard rubber,—and the pen support and flange are tightly pressed together, the material will be sufficiently distorted to make a close joint between the two, and the point of contact will then not be a mere line on the periphery of the parts, but will be of some width. The cylindrical thimble 10 may be closed at the top, as shown in Fig. 1, or open, as shown in Figs. 2 and 3.

I will first describe the invention as applied to the structure shown in Fig. 1, in which the thimble is closed. The thimble is of such a length that when the cap 6 is in place and is screwed tightly in position so that its lower edge engages with the outside of the tapering barrel 1, the thimble will be tightly and closely forced into contact with the flange 11, by engagement at the underside of the tip 9 with the upper part of the thimble. The outside diameter of the thimble is less than the inside diameter of the cap, so that there is some motion of the thimble within the cap, and it can accommodate itself to any irregularities of the flange 11 and the lower edge of the thimble. To attain the same object, namely,—to compensate for irregularities,—the upper face of the thimble is shown as curved, and the lower face of the tip 9 is shown as recessed. I prefer to make the shape of the recess different from the curve. As shown in the drawings, the upper face of the thimble is formed upon a true curve, while the depression 12 in the tip is formed upon straight lines. This will reduce the place of contact between the thimble and the tip to a circular line, and will, therefore, permit angular adjustment of the thimble within the cap.

For the purpose of preventing the thimble dropping out when the cap is taken off the barrel, the thimble is provided with a flange

13, which lies within the annular recess 14 formed on the inside of the cap 6. This flange 13 is larger than the inside of the main portion of the cap, therefore, when the cap is removed from the barrel, the thimble will not drop out. The parts are so proportioned, however, that the alining feature of the thimble is not affected. The screw threads which connect the tip 9 with the cap may be the same diameter as the recess 14. By making the tip 9 removable, it is possible to introduce the thimble from the outside of the cap.

According to my invention, the thimble can be secured in place by other means which may be different in shape from those described. As shown in Fig. 2, the thimble has an upper, open extremity. The tip 9 is provided with a central projection 15 having tapered walls as shown. This central projection 15 is of such a diameter that when the thimble is forced up against it, it will make a tight joint between it and the cap. In this modification of my invention the lower edge of the thimble is slightly different from Fig. 1, having beveled, or chamfered, edges 16, in order to make a tight joint with the flange 11 of the pen support 2.

Another modification of my invention is shown in Fig. 3 in which the same form of tip 9 is used as shown in Fig. 1. The thimble, however, is the same as that shown in Fig. 2, being open at the top but with beveled, or chamfered, upper edges 17, which make a tight joint with the lower face of the tip, when the cap is in place. It is apparent that when the cap is in place and is screwed upon the barrel, the thimble 10 is tightly forced against the flange 11 and the upper edge of the thimble is tightly forced

against the tip 9, producing an ink-tight joint preventing leakage. It is also apparent that the thimble will adjust itself to the inequalities or irregularities of parts. It is further apparent that the thimble will remain as a fixture within the cap, and, therefore, will not be lost when the cap is removed.

In accordance with the provisions of the patent statutes, I have described the principle of my invention, together with the apparatus which I consider represents the best embodiment thereof; but I desire it understood that such apparatus is merely illustrative and that the invention can be modified without departing from the spirit of the invention. I will now describe what I claim is new therein.

Having now described my invention, what I desire to secure by Letters Patent is:—

1. A fountain pen having a pen support, and a cap comprising a body portion having a shoulder on the inside thereof, a tip secured thereto, there being an annular recess between said tip and the shoulder on the inside of said body portion, a thimble within said cap arranged to cooperate with the top of said pen support, and a flange on said thimble lying in said recess.

2. A fountain pen having a pen support, in combination with a cap, said cap having a recess, and a tip and a thimble within the cap, said thimble having a flange which lies within the recess and adjacent to the tip.

This specification signed and witnessed this 5th day of April, 1910.

LAWRENCE J. FARRELL.

Witnesses:

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