

M. W. MOORE.
 FOUNTAIN PEN.
 APPLICATION FILED NOV. 28, 1914.

1,220,875.

Patented Mar. 27, 1917.

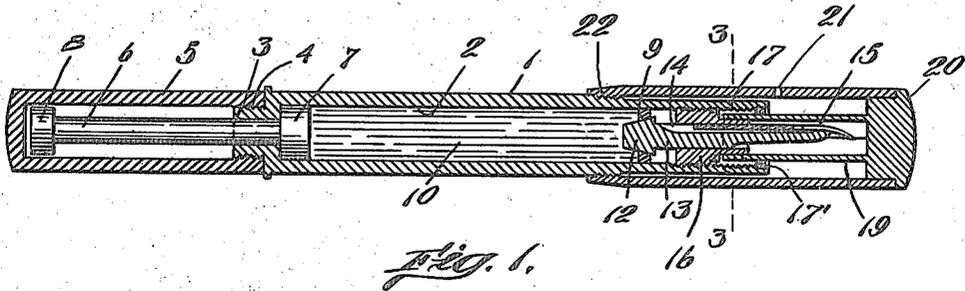


Fig. 1.

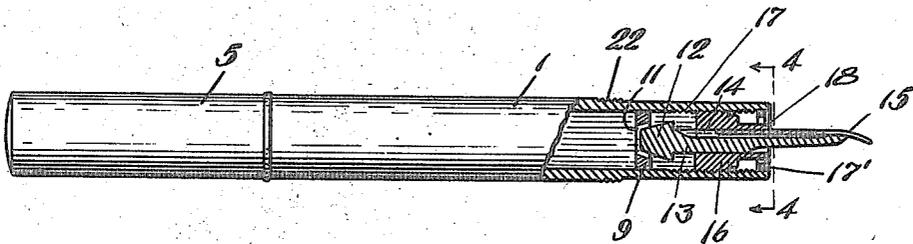


Fig. 2.

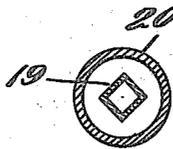


Fig. 3.

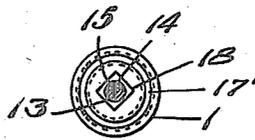


Fig. 4.

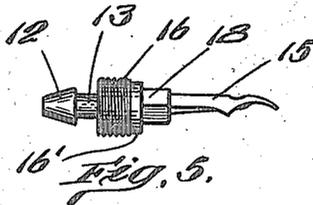


Fig. 5.

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UNITED STATES PATENT OFFICE.

MORRIS W. MOORE, OF SOMERVILLE, MASSACHUSETTS, ASSIGNOR TO SAMUEL WARD MANUFACTURING COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

FOUNTAIN-PEN.

1,220,875.

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To all whom it may concern:

Be it known that I, MORRIS W. MOORE, a citizen of the United States, residing at Somerville, county of Middlesex, Commonwealth of Massachusetts, have invented certain new and useful Improvements in Fountain-Pens, of which the following is a specification.

This invention relates to fountain pens and particularly to the so called nonleakable fountain pens with especial reference to that type of nonleakable pen in which the reservoir is controlled by a shut-off device mounted on the pen bar.

The principal objection to pens of this type is the possibility that the shut off device will not be operated to stop the flow of ink when it is no longer desired to write with the pen. The control of the shut off has usually been left to the volition of the user and this has made necessary a separate and conscious operation well adapted to be forgotten. Even the occasional forgetting to operate such a shut off device produces disastrous results not only due to the direct damage by reason of the leakage upon the clothing or in the pocket of the user, but to the general reputation of the pen as a commercial article as a result of a dissatisfied user. It is therefore greatly to be desired that a pen of this type be operable as to its shut off mechanism by some other operating feature of the pen with which the user is familiar and which the user must accomplish in order to place the pen in either its open or closed position.

To the end therefore of providing an ink tight fountain pen wherein the shut off will be positively controlled by an operating feature of the pen which must be manipulated before the pen will be placed in either its open or its closed position, I have devised my present invention. In it I mount the shut off for the ink reservoir directly on the pen bar and provide for a relative axial movement of the pen bar to seat and unseat the shut off by screwing on and off of the usual pen point protecting cap. This prevents the liability of the user forgetting to operate the shut off.

The construction and operation of my device will be more fully disclosed in the specification that follows. In the drawings forming a part of that specification I have shown a pen which not only clearly illus-

trates the principles involved but is in itself a form proven to be satisfactory in use and well adapted to the requirements of manufacture.

Throughout specification and drawings, like reference numerals are correspondingly applied, and in these drawings:

Figure 1 is a central longitudinal section through a fountain pen in accordance with my invention, and showing the shut off device in seated position,

Fig. 2 is a view similar to Fig. 1 with the pen cap omitted, showing the pen in writing position,

Figs. 3 and 4 are detail sections on the lines 3-3 and 4-4 of Figs. 1 and 2 respectively, and

Fig. 5 is an elevation of the pen bar removed.

The device of my present invention is shown as applied to a pen of the self filling type wherein a piston or plunger is reciprocated in the ink reservoir to draw a charge of ink into the reservoir when the pen point is dipped into an ink well. This type of pen has been selected simply as an illustrative embodiment of the principles of the invention and it should be understood that I do not limit the application of the invention to this or any other type of pen.

I have indicated at 1 a pen barrel having a uniform tubular bore 2 throughout. The rear end of the barrel 1 has a reduced boss 3 threaded externally at 4 to receive the internal threads of a cap 5. The boss 3 and rear end of the barrel 1 have registering axial openings therethrough in which slidably fits the stem 6 of a plunger or piston 7. The piston 7 is normally disposed with an ink tight fit on the reservoir side of the barrel end with its operating end 8 positioned adjacent the closed end of the cap 5 as shown in Fig. 1. In filling the pen, the ink is sucked into the reservoir by reciprocating the piston 7 therein.

The pen barrel near its pen end has an internal wall 9 which with the rear end of the barrel defines the ink reservoir 10. The wall 9 has a communicating opening 11 let therethrough for permitting flow of the ink from the reservoir to the pen point.

The ink flow is controlled and completely cut off by a controlling member mounted on the pen bar to move therewith. In the embodiment shown, this control member is a

conical shut-off valve 12 which normally seats against the wall 9 in ink-tight closing relation to the opening 11 therethrough. The valve 12 is fast on the pen bar 13 which has a longitudinal ink conduit 14 on its upper face for transferring the ink feeding past the valve to the pen point 15.

Beyond the valve 12 the pen bar has fast to it an annular externally threaded plug 16 which threads into the internally threaded open end 17 of the pen barrel. The plug 16 has a reduced portion 18 which is preferably squared as shown to receive the correspondingly formed operating sleeve 19 of a pen point protecting cap 20. The cap 20 has an air vent opening 21 as is usual. The open end of the cap 20 is threaded internally to engage a short series of external threads 22 cut on the pen barrel 1 near its open end. The threads 22 are of the same pitch as the threads of the plug 16 so that the pen bar and cap will move simultaneously.

In use, the parts are normally disposed in the position shown in Fig. 1, wherein the valve 12 seals the opening through the delivery end of the ink reservoir. When it is desired to write, the cap 20 is screwed off the threads 22 of the barrel. The rotation of the cap, through the engagement of its squared sleeve with the squared end 18 of the plug 16, rotates the pen bar out into the position shown in Fig. 2 to unseat the valve 12. The ink is now free to flow from the reservoir along the conduit 14 to the pen point. If it is desired to refill the reservoir, it is simply necessary to dip the pen point in the ink well, remove the cap 5 and reciprocate the piston in the reservoir. The volume of flow from the reservoir to the pen may be regulated according to the individual preference of the writer by simply rotating the plug 16 to effect a corresponding movement of the valve 12 relative to the opening 11.

When it is desired to again seal the reservoir the cap 20 is screwed on the barrel and

the plug 16 and pen bar are rotated toward the reservoir until the valve 12 again finds its seat on the wall 9.

To prevent the pen bar from being moved entirely out of the barrel, the plug has a plain unthreaded portion 16' adapted for contact with an internal stop shoulder 17' in the front end of the barrel.

The operation of screwing the cap on and off to open and close the pen is such a familiar one that the user performs it instinctively. If therefore the shut off is operated by this movement of the cap it will be seen that there is no danger of the user forgetting to open up or shut off the ink flow.

Various modifications in the form and construction of my device may obviously be resorted to within the limits of the appended claim.

What I therefore claim and desire to secure by Letters Patent is:

In a fountain pen, a barrel having an ink reservoir, a valve seat in said barrel, an internal stop shoulder at one end of said barrel, a pen bar consisting of a member having a valve at its inner end disposed for movement relative to said seat, an enlarged cylindrical plug on said pen bar in advance of said valve and having threaded engagement within said barrel, said plug having a plain portion at its outer end coacting with said stop shoulder of the barrel to prevent complete withdrawal of the pen bar from the barrel, and an engaging element on said pen bar in advance of said plain portion of the plug, and a cap having an operating device adapted for engagement with said engaging element of the pen bar when said cap is placed in position.

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

MORRIS W. MOORE.

Witnesses:

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MARION C. HOBBS.