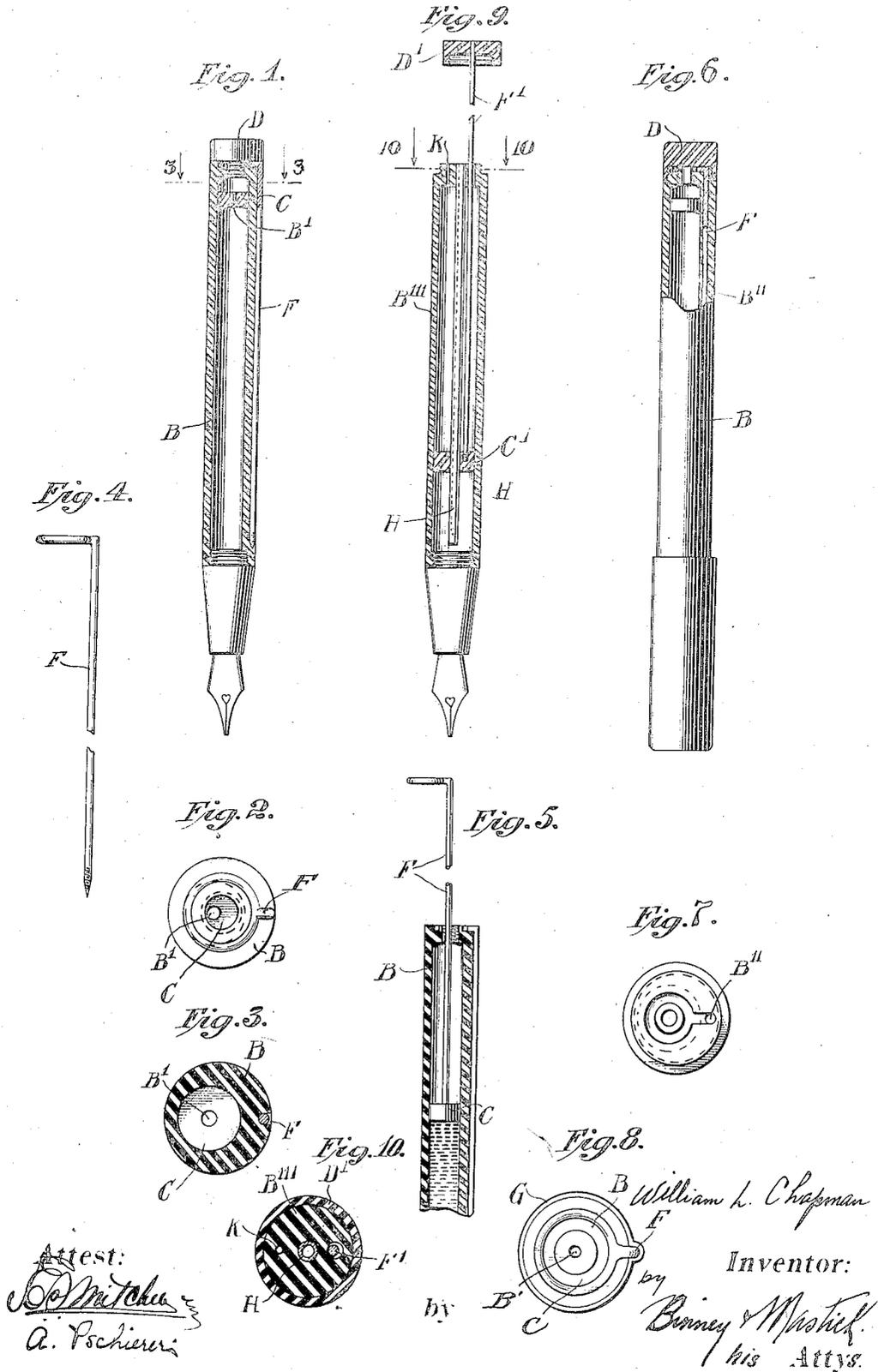


W. L. CHAPMAN.
 FOUNTAIN PEN.
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1,103,349.

Patented July 14, 1914.



Attest:
Wm. L. Chapman
 A. Pschierer

William L. Chapman
 Inventor:
 by *Binney & Mottick*
 his Attys.

UNITED STATES PATENT OFFICE.

WILLIAM L. CHAPMAN, OF NEW YORK, N. Y.

FOUNTAIN-PEN.

1,103,349.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM L. CHAPMAN, a resident of the borough of Brooklyn, city and State of New York, have invented certain new and useful Improvements in Fountain-Pens, of which the following is a specification, (Case G,) accompanied by drawings.

The invention relates to improvements in fountain pens and preferably of a character having, inherent in their structures, devices for drawing in ink from the body of the ink in order to refill the pen. Preferably also, the improvement is embodied in a front-filling pen in which the ink can be drawn through the same duct that supplies ink from the reservoir to the pen point.

The object of the invention is to provide the pen with filling devices of simple, reliable and easily operated character.

To this end, the preferred embodiment of the invention provides an imperforate piston which can be thrust to the forward end of the reservoir and then drawn back in order to suck in the ink and can then be left at the rear end of the barrel and the operating rod of the piston detached and held in a holding device outside the reservoir and either within a recess in the wall of the reservoir or on the exposed outside face of the wall.

The nature of the invention is such that it will be readily understood from the description of the accompanying drawings.

Figure 1 is a longitudinal view partly in central section showing a pen embodying the improvement. Fig. 2 is a rear end view of the pen with the end cap D missing. Fig. 3 is a cross-section on the plane 3—3 of Fig. 1. Fig. 4 is a detailed view of the piston rod F. Fig. 5 is a partial view of the same pen as Fig. 1, showing the piston rod at the position of midoperation. Fig. 6 is another form of the improvement, seen partly in outside view and partly in central section. Fig. 7 is an end view of the same pen with the rear end cap removed. Fig. 8 is a detailed view of a modified piston rod holding device, shown in storage position against the barrel with the end cap D removed. Fig. 9 is a longitudinal cross-section of another form of the invention. Fig. 10 is a cross-section of the same on line 10—10 of Fig. 9.

The piston operating rod may preferably be of metal and very slim relative to the diameter of the reservoir. The rod may be

held or stored, when not in use, in a socket or scabbard formed in the wall of the barrel, or it may be laid in a groove in the exposed face of the barrel, or it may lie entirely outside of the barrel within one or more metallic collars or bands surrounding the barrel. In the operation of the pen, the piston, after being drawn back to draw the ink, may be left undisturbed at the higher position without danger of producing pressure while disconnecting the piston rod or while placing it in storage position.

In Figs. 1 to 5, inclusive, B is the barrel of the pen containing the ink reservoir. C is the filling piston. D shows the screw plug cap for closing the piston rod orifice at the rear end of the barrel and for binding the piston rod when in its storage position. Piston C is imperforate and has a screw-threaded recess by which it is screwed onto and secured to the screw-threaded operating rod F. This piston rod is preferably of stiff wire, the upper end being bent to a loop and the loop bent down at right angles to the shaft of the rod. The loop or eye formed at the upper end of the rod F serves the purpose of handle and also that of a lock. The screw-threaded plug of cap D is adapted, as shown in Fig. 1, to pass through the eye of the filling piston rod and to hold the handle end of the piston rod tightly to the end of the pen. In Fig. 1, the forward end of the piston rod F is shown lying in and received and held by a channel or groove in the outer face of the reservoir wall. Details of construction will be clear from a comparison of Figs. 1, 2, 3, 4 and 5 with each other. The rear end of the barrel of the pen and the eye and the rear end of the piston rod F are fitted to each other so that the cap D can be screwed snugly down to hold these two parts firmly together in position, shown in Fig. 1. In operating this pen, when it needs refilling, the screw cap D is first taken off and the piston rod F inserted through the hole B' and screwed into the piston. Thereupon the piston can be operated, as plainly shown in Fig. 5, and can express the last drops of the old ink and then draw in fresh ink. After drawing the piston to its rearmost position, as shown in Fig. 1, the rod F is unscrewed and restored to the position there shown and there secured by means of the cap D. It will be seen that in disconnecting and storing the piston rod F nothing occurs tending to produce a pressure or

to decrease the active reservoir space in front of the piston C.

In Figs. 6 and 7, it will be seen that the piston rod F is stored in a tubular recess or passage within the wall of the pen, this passage being marked B'' in Fig. 7. In other respects, the construction of Figs. 6 and 7 may be similar to Figs. 1 to 5.

In Fig. 8, the piston rod F, seen in storage position, is held to the walls of barrel B by means of a metallic-band G, similarly to the old ram-rod holders on ancient guns. When stored in this position, the piston rod forms a projection on the wall of the pen which will prevent the pen rolling down a slightly inclined table or other supporting surface. The loop or eye of the rod F is held as described in connection with Figs. 1 and 2.

In Fig. 9 the piston rod F' is shown operating eccentrically upon the piston C' through an eccentric hole at the rear end of the pen barrel B'''. Centrally extending from the rear end of the barrel through a sliding ink-tight joint in the piston is a sheath H closed at its forward end and adapted to receive the piston operating rod F' when the rod has been disconnected from the piston. The rear end cap or cover D' may be permanently secured concentrically to the rear end of the piston rod F', so that when the piston rod is put in its sheath, the pen is ready for use. The cap may be screwed down upon the screwthreads D'', tightly covering and concealing the rod, the sheath and the perforations in the rear end of the barrel. If the piston rod F' fits approximately tightly through the perforation in which it reciprocates in operating the piston, then a separate vent-hole K may be provided to allow air to pass into and out of the pen barrel behind the piston.

It will be seen that the piston operating rod may have any of a great variety of forms and be stored and held in a great variety of ways, but those which are described have certain advantages which are in part the subject-matter of specific claims.

Having now described the nature of my invention, I claim as my own and desire to secure by Letters Patent the following, as an article of manufacture and an improvement in fountain pens and the like:

1. A fountain pen having a barrel provided with an ink reservoir, a filling piston, and a piston rod detachable from the piston for storage, said barrel having a rear end wall provided with an opening for admitting the piston rod in operative position, and means for receiving the piston rod in storage position separated from the piston, and a rear-end cap which closes the said piston rod opening and also engages and secures the rear end of the piston rod when in its storage position.

2. A fountain pen having a barrel provided with an ink reservoir, a filling piston therein, a piston rod detachable from the piston for storage and having a handle at its rear end, said pen having means for receiving and holding the piston rod when detached and separated from the piston, and a cap which closes the rear end of the barrel and engages and confines the said handle in its storage position.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses, this 27th day of January, 1913.

WM. L. CHAPMAN.

Witnesses:

HOBART W. GEYER,
JOHN HERR.