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FOUNTAIN PEN

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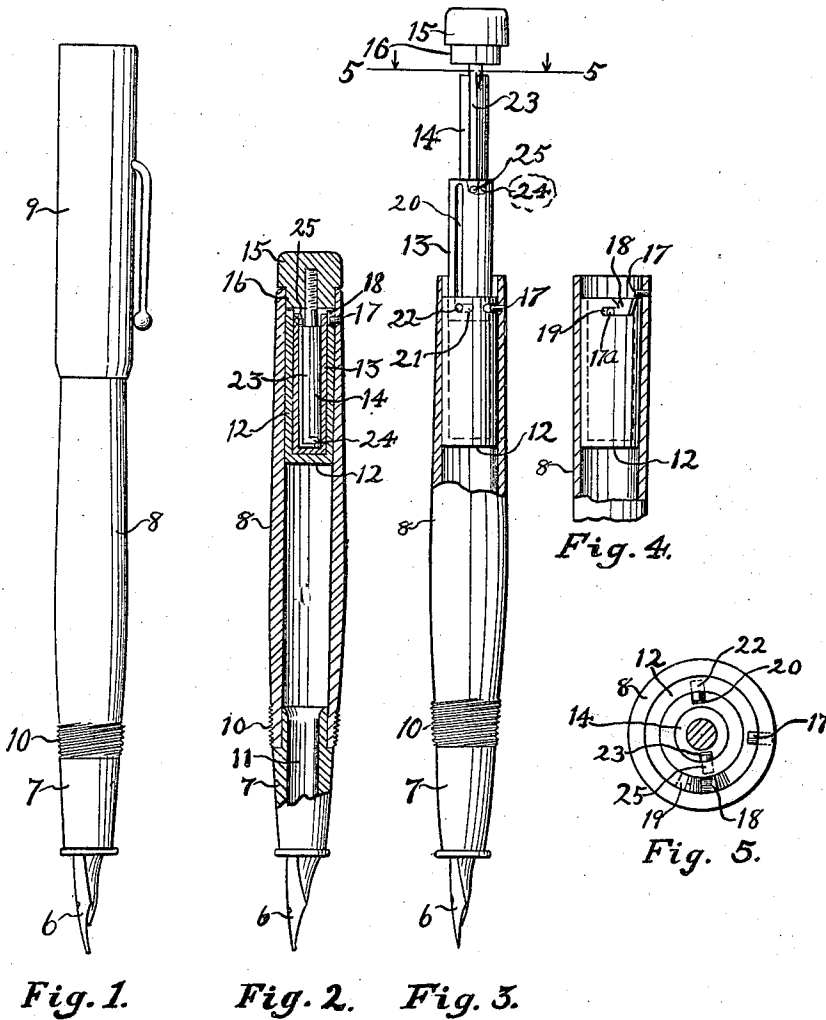


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

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FOUNTAIN PEN.

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This invention relates to fountain pens of the class having a filling device, and the object is to provide a simple and efficient pen of said kind involving the use of an ink sucking plunger with an extensible operating rod.

In the accompanying drawing:

Fig. 1 is a vertical elevation of the pen ready for use and its cap 9 in position on the rear end.

Fig. 2 is a diametrical section of the greater part of Fig. 1 with the cap omitted and the operating rod telescoped into the plunger.

Fig. 3 is an elevation of the shell of my pen the upper part of which is shown in section and the plunger operating rod shown in extended position.

Fig. 4 is a portion of Fig. 3 viewed from the right.

Fig. 5 is an enlarged section on line 5—5 in Fig. 3 or may be considered a phantom cross section showing the telescoping arrangement of all the main parts except the cap 9 in Fig. 1.

Referring to the drawing by reference numerals, 6 designates the pen point secured in the usual front part 7 of the shell or hollow body 8 of the pen holder, which in the present case, as in most cases, has a cap 9 threaded at 10 or adapted to be frictionally held upon either end of the hollow body.

The part 7 has a duct 11 through which ink flows from the body tube 8 to the pen during writing and through which the ink is filled into the tube by suction when a plunger 12 is pulled upward in the tube 8 by a rod made of telescoping sections 13, 14, the latter having a head 15 with a projection 16 fitting snugly as a stopper in the top end of the body tube 8 when the rod sections are telescoped and pushed into the plunger after the latter is pulled as far as possible toward the top end of the device.

To explain this structure more fully it will be seen that the body 8 has near its upper end an internal pin 17 for the top end of the plunger 12 to engage and have its upward movement stopped. In Fig. 4 is best shown that if the plunger 12 is slightly rotated it may have its notch 18 receive the pin 17 and by further rotation the pin will get as 17<sup>a</sup> into a horizontal extension 19 of the notch and will thus prevent accidental descent of the plunger. The plunger has a

solid bottom and sides in the form of a piston open at the top and inside of it slides the tubular rod section 13 which has an external longitudinal groove 20 with a horizontal extension 21 at its lower end. This groove is slidable on an internal pin or stud 22 in the upper end of the plunger 12. In like manner the top section 14 of the rod has a lateral groove 23 with an angular extension 24 at its lower end and a circular extension around the section close below the stopper 16 of cap 15, said groove is engaged by a pin or stud 25 fixed in the rod section 13.

With this arrangement it will be understood that in operation when the body tube or ink magazine 8 is to be filled with ink it is held in one hand while the operator turns with his other hand the head 15 sufficiently to the left to bring the rod sections with their grooves into line with the pins 22 and 25 and then pulls rod sections into fully extended position. Next he turns the head 15 and thereby the rod section to the right as far as they will go. This causes all the horizontal extensions 21 and 24 of the grooves to engage the pins 22 and 25 and also to disengage the notch 19 from the pin 17. He then pushes the rod and plunger downward to their limit, holds the front end of the pen in an ink-well while pulling the rod and plunger back again to their upper limit. The pen holder is thus filled with ink sucked in by the plunger 12, whereupon the rotated rod causes the plunger pin 17 to engage as 17<sup>a</sup> in Fig. 4, after which the rod sections are pushed down into the plunger, and the head 15—16 is closed tightly.

I claim:

1. In a fountain pen, a cylindrical body comprising an ink reservoir and having a duct leading to the pen point, an upwardly opening cylindrical plunger, oscillatable in said body; an operating rod comprising two sections adapted to be telescoped into each other and into the plunger; a head at the upper end of said rod and adapted to close the top end of the cylindrical body when the rod is telescoped into the plunger and the latter is in spaced relation to the pen end of the fountain pen; means for interlocking the sections of the rod in extended and in contracted positions and means limiting the raising of the plunger.

2. The structure specified in claim 1, in which the means for limiting the raising of

the plunger consists of a lug or pin at the inner side of the upper end of the cylinder, and said plunger having also an L-shaped notch in its top adapted to interlock with said pin to prevent accidental descent of the plunger.

3. The structure specified in claim 1, in which the means for limiting the raising of the plunger consists of a lug or pin at the inner side of the upper end of the cylinder, and said plunger having also an L-shaped notch in its top adapted to interlock with said pin to prevent accidental descent of the plunger, said plunger having also near its top end an internal stud and the rod section slidable in the plunger having an L-shaped groove slidable on said stud, the foot of said L being arranged in reverse direction of the L-shaped notch in the plunger.

4. The structure specified in claim 1, in which the means for limiting the raising of the plunger consists of a lug or pin at the inner side of the upper end of the cylinder, and said plunger having also an L-shaped notch in its top adapted to interlock with said pin to prevent accidental descent of the

plunger, said plunger having also near its top end an internal stud and the rod section slidable in the plunger having an L-shaped groove slidable on said stud, the foot of said L being arranged in reverse direction of the L-shaped notch in the plunger; said rod section in the plunger being also tubular and having an inside stud near its upper end and the next higher rod section having an L-shaped external groove slidable on the latter stud and the L-portion of its groove turned to the same side as that in the first mentioned lower rod section.

5. The structure specified in claim 1, in which the top section of the rod has a longitudinal L-shaped groove with a circular extension about the rod near the head of the latter, and the next lower section has an internal radial projection engaged in said groove, thus making the top section and its head, when in raised position, rotatable independently of the plunger and the next section above it.

In testimony whereof I affix my signature.

JOHN C. POETZ.