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(54) **FOUNTAIN PEN**

(57) **Abstract:**

(54) **STYLO**

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This invention relates to improvements in self filling fountain pens of the kind having a collapsible resilient ink reservoir arranged within the barrel of the pen and adapted to be compressed by a bar actuated by a pivoted lever in order that ink may be drawn into the reservoir when the pressure thereon is released.

In the present-day self-filling fountain pens it has been found that the reservoir can only be partially filled with ink; therefore, the pen has to be replenished with ink at frequent intervals. It is the object of this invention to provide improved means for actuating the reservoir collapsing bar in such a manner that the reservoir can be substantially or completely filled with ink when the refilling operation is performed.

A further object is to provide means which so actuate the reservoir collapsing bar that the air is expelled from the rear portion of the reservoir before the front portion thereof.

With these and other objects in view the invention is characterised in that the rear portion of the collapsible ink reservoir is collapsed before the front portion thereof.

The invention further consists in actuating the reservoir collapsing bar through the medium of a plurality of connected levers or links in such a manner that when the refilling operation is performed the air will be continuously ejected along the reservoir from the rear thereof to the nib portion so that the reservoir can be substantially or completely filled with ink.

The invention will now be described with reference

to the accompanying drawings, in which:

Figure 1 is a longitudinal sectional elevation of one form of pen constructed in accordance with this invention showing the collapsing bar when in its depressed position in full lines and when in its normal position by dotted lines.

Figure 2 is a cross section taken on the line 2-2 of Figure 1.

Figure 3 is a similar view to Figure 1 showing the collapsing bar partly depressed.

Figure 4 is a longitudinal sectional elevation of a part of a self filling fountain pen showing a modification of the invention, and

Figure 5 is an inverted plan of the operating lever shown in Figure 4 and the casing for the levers and links.

As shown more particularly in Figures 1 to 3, the body a of the pen which is adapted to contain a flexible bag reservoir b in the usual manner is longitudinally slotted at c for the reception of a plurality of transversely arranged pivot pins d. On each of these pivot pins d is pivotally mounted levers, links or the like e, f, g. The lever e is formed with an outward extension or handle h whereby it may be actuated from the exterior of the pen. This actuating lever h is adapted to lie substantially flush with the body a of the pen when in its inoperative position. This operating lever h is preferably shaped at its outer end to provide a handle or grip i whereby it may be conveniently moved to its operative position. This handle or grip portion i of the lever h is adapted to lie in a recess or the like j

formed in the barrel a of the pen. To the inner end of the operating lever e and the levers, or links f, g is pivoted in any suitable manner a connecting bar or the like k. The arrangement is such that the parts are adapted to act substantially as a parallel rule movement. The ends of the levers or the like e, f and g are, upon the operation of the operating lever h, adapted to act upon a reservoir collapsing bar l which latter extends preferably the full length of the bag reservoir a and is of curved shape in cross section. The rear lever or link g is enlarged or formed with an extension m which is adapted when the device is operated to engage with the reservoir collapsing bar l before the other levers or links. When the operating lever h is moved to a substantially vertical position, the reservoir collapsing bar l presses on the bag b to collapse it for the refilling operation in the usual manner, but during the collapsing of the bag b, the collapsing bar l is tilted so that the rear end of the bag will be collapsed before the front end of the bag b which is connected in the usual manner to the nib carrier n in which is mounted the feed bar o adapted to feed the nib p. Thus the air in the bag b will be expelled in the direction from the rear end of the bag and the bag will collapse in such a manner that no air locks will occur. When the operating lever h is moved back to its initial position during the refilling of the pen, the ink will be drawn into the reservoir b and will completely fill the same.

In a slightly modified construction, as shown more particularly in Figures 4 and 5, the pivot pins q of the

levers or links e, f and g which may be constructed of U-shaped material are mounted in a box like device q, preferably constructed of metal. This box like device q is of substantially U-shape in cross section to provide a pair of longitudinal flanges r and an intermediate portion s which is adapted to conform to the body a of the pen. This intermediate portion s is extended at each end to provide ears t which are adapted to be connected to the body of the pen in any convenient manner, preferably by screws u passing through holes in the said ears t and screwing into the body a of the pen which latter is constructed of vulcanite or other suitable material. In this case the intermediate lever h is adapted to extend through the slot in the intermediate portion s of the box member q and this lever h is shaped to provide a handle or operating lever. The operation is similar to that previously described in connection with the other construction. It will be understood that the other means may be provided to incline the reservoir collapsing bar during its movement on the bag, such as an extension or hump y formed or provided on the connecting bar or the like. Further, any number of levers or links may be employed to operate the collapsing bar or only two levers may be employed.

Thus it will be seen that I have provided operating means for an ink reservoir which are of extremely neat and simple construction and which will enable the reservoir to be more completely filled with ink.

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I CLAIM:-

1. A self filling fountain pen having a collapsible ink reservoir, a plurality of levers, a bar pivoted to the levers and adapted to compress the ink reservoir so that the rear portion is collapsed before the front portion, and means for operating the levers.

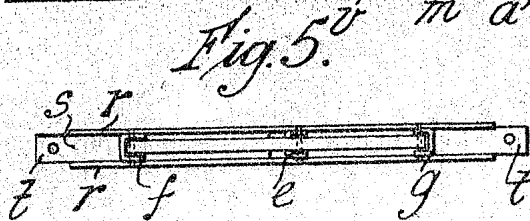
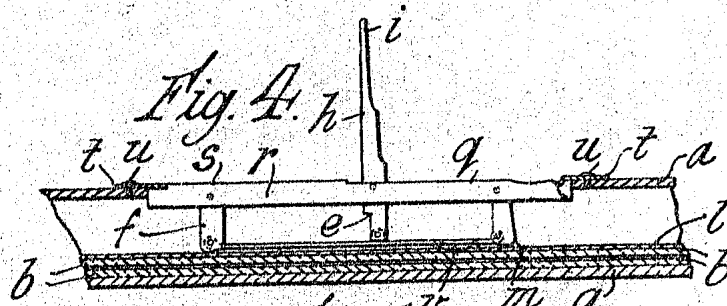
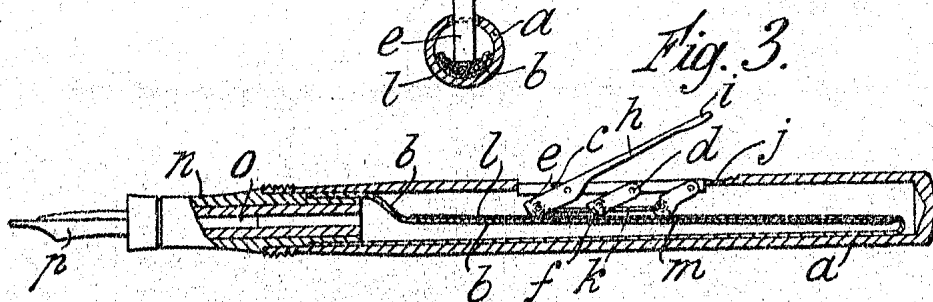
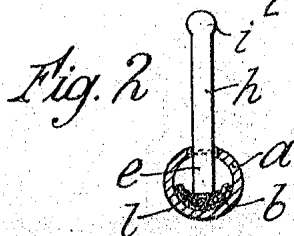
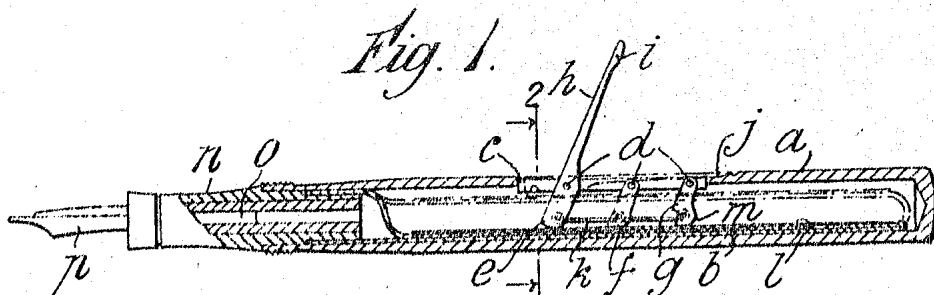
2. A self filling fountain pen having a collapsible ink reservoir, a plurality of levers, a bar pivoted to the levers and adapted to compress the ink reservoir so that the rear portion is collapsed before the front portion, and a lever arranged externally of the reservoir for operating the other levers.

3. A self filling fountain pen having a collapsible ink reservoir, a plurality of levers, a bar pivoted to the levers and adapted to compress the ink reservoir, so arranged that one of the plurality of levers operates the bar in advance of the other levers so that the rear end of the bar is depressed before the forward end.

4. A self filling fountain pen having a collapsible ink reservoir, a plurality of levers, a bar pivoted to the levers and adapted to compress the ink reservoir, and means actuated by the levers so that the rear portion of the bar is operated in advance of the front portion.

5. A self filling fountain pen having a collapsible ink reservoir, a plurality of levers, pins arranged transversely in a slot cut in the barrel of the pen and forming pivots for the levers, a bar pivoted to the levers and adapted to compress the ink reservoir so that the rear portion is collapsed before the front portion, and means for operating the levers.

10X



Witness:—

A. P. [Signature]
[Signature]

Certified to be the drawings referred
 to in the annexed specification.

Inventor:—
Harry Ross
 Per Atty.

[Signature]

Montreal, Aug 15 1913