

PATENT SPECIFICATION



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Complete Left: Nov. 14, 1930,

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PROVISIONAL SPECIFICATION.

Improvements in and relating to Fountain Pens.

I, ALBERT MEREDITH SPAIN (British Nationality), of Ringlestone Farm, Ringlestone, Harrietsham, Maidstone, Kent, do hereby declare the nature of this invention to be as follows:—

5 My invention is related to that type of self-filling fountain pen, in which the ink is taken into the ink reservoir by a rubber sac by means of deflating the rubber sac and allowing it to expel and absorb its supply of liquid.

10 I take an ordinary fountain pen holder, and fit within this a tube of metal or other material as herein described. This tube is passed within the barrel of the pen either from the back or front end as may be desired, and is suitably prevented from movement within the barrel, and through such tube passes and rests the rubber sac.

15 The front end of the pen is fitted with any shaped section desired. The back end is fitted with a revolving plug or end-piece on which is fitted a suitable projection to engage and operate the presser-bar, which is hinged to the bar above mentioned as later described.

20 The tube is of a size to fit the inside of the barrel and of a length suitable to the barrel. Approximately half of the tube is cut away for nearly its whole length

sufficient to leave two or three m/m width of the tube remaining at both ends of the tube.

Both the remaining ends of the tube are pressed in to make a small gully in which to hold or place the two ends of the wire fitted to the presser-bar. 35

The presser-bar consists approximately of the piece removed from the tube, and along this entire length and for two or three m/m beyond at both ends, is fixed a wire of suitable dimensions. The presser-bar and wire attached are then inserted into two gulleys which act as a holder which supports and allows the presser-bar to hinge. 40 45

The back end of the presser-bar is cranked, and comes in contact with the projection above referred to on the back end of plug, which plug, when rotated presses down the presser-bar or releases same at will. 50

Thus I attain my object of compressing the sac over its entire length without any external mechanism. 55

Dated this 12th day of February, 1930.

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125, High Holborn, London, W.C. 1,
Agent for the Applicant.

COMPLETE SPECIFICATION.

Improvements in and relating to Fountain Pens.

I, ALBERT MEREDITH SPAIN (British Nationality), of Ringlestone Farm, Ringlestone, Harrietsham, Maidstone, in the County of Kent, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

60 This invention relates to fountain or reservoir pens of sac self-filling type and in which the collapsing of the sac in the ink-charging operation is effected by means of a presser bar disposed longitudinally within the pen body or barrel and actuated through the rotary motion of an external operating knob, or the like.

[Price 1/-]

Broadly, my invention is characterised in that the presser bar in cross-sectional configuration conforms to the curvature of the inner wall of the pen body or barrel and the outer wall of the sac, and has one of its longitudinal edges hinged or pivoted adjacent the inner wall or a liner of said pen body or barrel in such manner that on rotary actuation of an external operating knob, or the like, it will turn or move laterally on or about its longitudinal hinge or pivot and uniformly bear on the sac throughout the entire compressible portion of the latter. 75 80 85

Said sac-actuating presser bar may be turned laterally on or about its longi-

tudinal hinge or pivot through the medium of an external knob revolvably mounted at the rear or shank end of the pen body or barrel and provided with an axial offset or eccentrically placed pin which projects into the path of a tongue or lip formed on an end of the presser bar. Or, a sac-compressing lever may be so arranged at a side of the barrel as to effect—when actuated by hand—lateral movement of the presser bar.

In carrying out my invention, according to one mode of embodiment, the sac-actuating presser bar has one of its longitudinal edges hinged or pivoted adjacent the inner wall of the pen body or barrel by means of projections formed or provided on opposed ends of the presser bar and adapted to engage in aligned or registering grooves or recesses in appropriately spaced rings or bands affixed to the inner wall of the body or barrel.

In another arrangement, the presser bar is cut from a sleeve or tube which is affixed to the inner wall of the pen body or barrel and is provided with appropriately spaced aligned or registering grooves or recesses wherein projections formed or provided on opposed ends of the presser bar are adapted to engage to hinge or pivot one of the longitudinal edges of the presser bar adjacent the inner wall of the body or barrel.

In a further embodiment, a separate sleeve or tube is affixed to the inner wall of the pen body or barrel to form a liner therefor and the presser bar is inserted into the liner and has one of its longitudinal edges hinged or pivoted adjacent the inner wall thereof by means of projections formed or provided on opposed ends of the presser bar and adapted to engage in appropriately spaced aligned or registering grooves or recesses in the liner.

In the case where the presser bar is actuated by the offset or eccentrically placed pin of an external operating knob, a shoulder or stop may be stamped in said sleeve, or in one of the bands, or otherwise provided in the pen body or barrel in the path of said pin or in the path of the presser bar to limit or control the rotary movement of the external operating knob when the latter is turned by hand to actuate the presser bar in the ink-charging operation.

I will further describe my invention with the aid of the accompanying sheet of explanatory drawings which illustrate, by way of example only, one mode of carrying the same into effect.

In said drawings:—

Fig. 1 is a sectional plan of a portion of a sac self-filling fountain or reservoir pen provided with my improvements; Fig. 2

is a transverse section taken as on line A—A Fig. 1 showing the sac-actuating elements in their normal positions, and Fig. 3 is a transverse section similar to Fig. 2 but illustrating the positions of the sac-actuating elements when the sac is collapsed in the ink-charging operation.

1 represents the pen body or barrel and 2 denotes the nib section pushed into the lower end of the barrel and carrying the ink sac 3 in customary manner.

Extending longitudinally along the interior of said body or barrel 1 is a rigid sac-actuating presser bar 4 made of brass or other suitable material. Said bar, in cross-sectional configuration, conforms to or follows the shape or curvature of the adjacent part of the inner wall 5 of the barrel against which it normally bears and the outer wall of the sac, so that it is snugly accommodated in the annular space between said wall 5 and sac 3 to permit of maximum inflation of the sac and corresponding induction effect on the ink when the pen is being charged.

Formed on the opposed ends 6, 7 of said presser bar 4 adjacent the longitudinal edge 8 thereof are small projections 9 which loosely engage or fit in aligned or registering grooves or recesses 10 stamped in metal rings or bands 11, 12 fixedly secured to the inner wall 5 of the body or barrel 1 in suitably spaced relationship. Thus the presser bar 4, being hinged or pivoted at its longitudinal edge 8 adjacent the inner wall 5 of the barrel, may turn or move laterally on or about this hinge or pivot, and consequently, the other longitudinal edge 13 of the bar will act uniformly upon sac 3 throughout the entire length of its compressible portion to cause complete collapse of the same in the ink-charging operation. It is to be noted that the width of presser bar 4 is so determined in relation to the bore of barrel 1 that its longitudinal edge 13 will act upon the sac in a direction towards the centre thereof in order to attain the maximum compressing effect.

In order to actuate presser bar 4 in the manner just described, there is revolvably mounted at the rear or shank end of barrel 1 an external knob 14 of vulcanite or other suitable material to which is fixedly attached a small metal pin 15. Said pin is offset or eccentrically arranged in relation to the axis of the external operating knob 14 and extends into the path of an appropriately formed tongue or lip 16 on the end 6 of the presser bar. When knob 14 is turned by hand in one direction of rotation, pin 15 acts upon said tongue or lip 16 to move presser bar 4 to the position illustrated in Fig. 3 to collapse the sac: on the knob being turned, in reverse

direction however, sac 3 is permitted to regain its original shape so as to induce a charge of ink into the pen and the presser bar is allowed to move to the normal position illustrated in Figs. 1 and 2, the presser bar hereafter remaining in this position until knob 14 is again wilfully operated by hand.

Preferably, a shoulder or stop 17 is stamped in the metal band or ring 12 in the path of said offset pin 15 in order to limit the turning movement of hand knob 14, as otherwise the longitudinal edge 13 of the presser bar may tend to bite into or cut sac 3. It will, however, be understood that a stop need not be provided since pin 15, in its continued rotary motion, will cause lip 16 of the presser bar 4 to bear against the inner wall 5 of barrel 1.

It is to be understood that whilst the invention has been described in relation to its preferred form various alterations or modifications may be made without departing from the spirit and scope of the same as defined by the claims. For example, the longitudinal edge 8 of presser bar 4 may be hinged or pivoted adjacent the inner wall of barrel 1 in any convenient manner other than that shown. Again, the presser bar may be stamped from a metal sleeve or tube which is anchored within the pen barrel in substitution for the spaced rings or bands 11, 12; or further, a complete sleeve or tube may be fixed in the barrel 1 to form a metal liner for the inner wall 5 thereof and also to hingedly or pivotally support presser bar 4 within the barrel. A small presser-bar-actuating lever may also be mounted on the barrel 1 in the path of the tongue or lip 16 in substitution for the revoluble external knob 14.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A sac self-filling fountain or reservoir pen of the type hereinbefore referred to, which is characterised in that the presser bar in cross sectional configuration conforms to the curvature of the inner wall of the pen body or barrel and the outer wall of the sac, and has one of its longitudinal edges hinged or pivoted adjacent the inner wall or a liner of said pen body or barrel in such manner that on rotary actuation of an external operating knob, or the like, it will turn or move laterally on or about its longitudinal hinge or pivot and uniformly bear on the sac throughout the entire compressible portion of the latter.

2. A sac self-filling fountain or reservoir pen as claimed in the preceding Claim, in which said sac-actuating presser bar is adapted to be turned or moved later-

ally on or about its longitudinal hinge or pivot through the medium of an external knob revolubly mounted at the rear or shank end of the body or barrel and provided with an axial offset or eccentrically placed pin which projects into the path of a tongue or lip formed on an end of the presser bar.

3. A sac self-filling fountain or reservoir pen as claimed in either of the preceding Claims, in which said sac-actuating presser bar has one of its longitudinal edges hinged or pivoted adjacent the inner wall of the body or barrel by means of projections formed or provided on opposed ends of the presser bar and adapted to engage in aligned or registering grooves or recesses in appropriately spaced rings or bands fixed to the inner wall of the body or barrel.

4. A sac self-filling fountain or reservoir pen as claimed in either of the preceding Claims 1 or 2, in which said sac-actuating presser bar is cut from a sleeve or tube which is fixed to the inner wall of the body or barrel and is provided with appropriately spaced aligned or registering grooves or recesses wherein projections formed or provided on opposed ends of the presser bar are adapted to engage to hinge or pivot one of the longitudinal edges of the presser bar adjacent the inner wall of the body or barrel.

5. A sac self-filling fountain or reservoir pen as claimed in either of the preceding Claims 1 or 2, in which a separate sleeve or tube is fixed to the inner wall of the body or barrel to form a liner therefor and said sac-actuating presser bar is inserted into the liner and has one of its longitudinal edges hinged or pivoted adjacent the inner wall thereof by means of small projections formed or provided on opposed ends of the presser bar and adapted to engage in appropriately spaced aligned or registering grooves or recesses in the liner.

6. A sac self-filling fountain or reservoir pen as claimed in any one of the preceding Claims, in which a shoulder or stop is stamped in said sleeve, or in one of the bands, or otherwise provided in the body or barrel in the path of said offset or eccentrically placed pin, or in the path of the presser bar, to limit or control the rotary movement of the external operating knob when the latter is turned by hand to actuate the presser bar in the ink-charging operation.

7. A sac self-filling fountain or reservoir pen substantially as hereinbefore described, and illustrated in the accompanying drawings.

Dated this 13th day of November, 1930.

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Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1981.

[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 1.

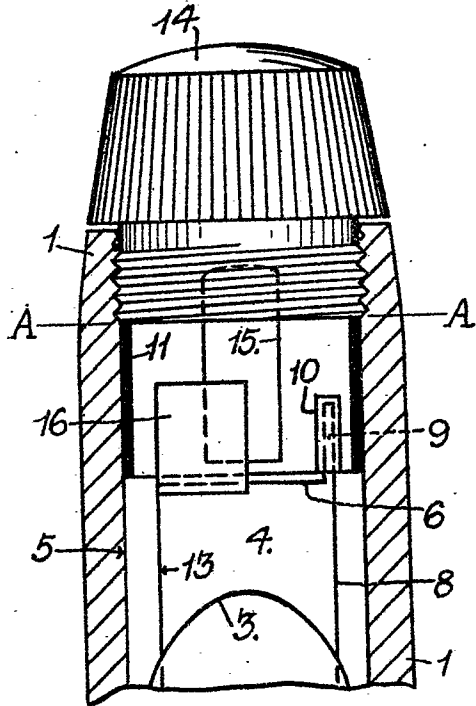


Fig. 2.

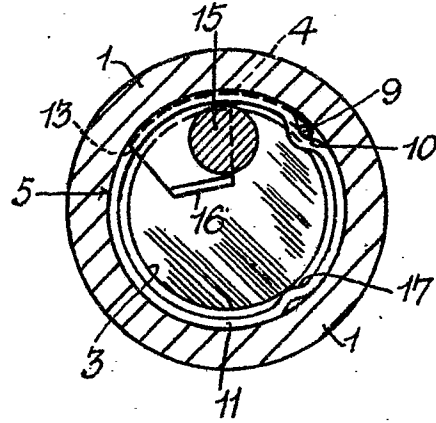


Fig. 3.

