PATENT SPECIFICATION

414,929

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PROVISIONAL SPECIFICATION.

Improvements in or relating to Fountain or Reservoir Pens.

I, ERIC ERNEST SAMUEL WADE, (British Nationality), of 13, Hope Street, Liverpool, in the County of Lancaster, do hereby declare the nature of this invention to be as follows:—

This invention relates generally to fountain or reservoir pens, and more particularly to reservoir pens of the kind in which an air tube of small bore extending longitudinally through the ink reservoir and opening at its upper or inner end to the reservoir and at its lower or outer end to and at a convenient point in the ink feed passage of the feed bar co-operates with means for varying the pressure in the reservoir in order to provide a simple and convenient mode of filling or charging the pen with ink. In pens of this kind it is usual to provide a small sac on the rear end of the rigid body or barrel which constitutes an ink container or reservoir, or a plunger-like element reciprocally disposed in such end of the barrel, as a pressure varying means, the ink charge being induced through the feed bar directly into the interior of the barrel by repeated collapse and expansion of the small end sac or by reciprocatory motion of the plunger element.

The object of the present invention is to provide a new or improved form or construction of fountain or reservoir pen which is primarily characterised or distinguished in that it includes an ink sac of a size or length usually employed in sac self-filling pens, and such sac contains an air tube and is attached to the nib section in customary or other convenient manner. Thus the sac itself constitutes an ink container or reservoir, and since the ink makes contact only with the vulcanite feed and nib section and the sac, the latter may be enclosed within a rigid body or barrel made of any cheap or inexpensive material, in contradistinction to pens of the aforementioned type in which the small end sac serves, not as an ink container, but merely as a pressure varying means, and the ink is in direct contact with the body or barrel which, of course, serves as the ink reservoir.

According to my invention, I provide a collapsible sac of normal length connected in usual or in other convenient manner to the upper or inner end of a push-in or screw-in nib section; a tube of small bore extending longitudinally through the interior of said sac and terminating at its upper or inner end some distance from the closed end of the sac and connected at its opposite end with a central passage or socket of a push-in feed bar located in the nib section and with the customary feed channel of said feed bar by way of a lateral communicating orifice or duct in the bar; and a body or barrel enclosing the sac and secured at its lower or inner end either frictionally or by screwing to the nib section, said body or barrel being divided into two parts at a convenient point in its length and reconnected in readily detachable manner so that the upper or rear end portion of the same may be readily removed or disconnected to expose the end of the sac which, upon being repeatedly collapsed and expanded by finger or mechanical pressure, charges the sac with ink consequent on air pressure fluctuations within the interior of the sac and said air tube.

Preferably, the inner air tube is made of vulcanite or similar material and is frictionally anchored at its lower or outer end within said central passage or socket of a feed bar made of a similar material, whilst the open end of the rubber ink sac is suitably anchored upon a reduced extension on the rear or inner end of the nib section which is also formed immediately below said extension with a slightly larger shank or shoulder portion arranged to make a friction-tight or screw fit in the lower or outer end portion of the sac-enclosing body or barrel. The body or barrel itself—which may be made of vulcanite or other suitable material—is preferably divided at an intermediate point in its length and then reconnected by means of a small tubular element made preferably of brass or other suitable metal, and which tubular connection has a part firmly secured in the portion of the barrel associated with the nib section and located by an external annular flange or shoulder, and a second part externally screwthreaded to receive a correspond-

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ingly tapped portion of the removable barrel section.

A nib-protecting cap of usual construction may also be provided to screw onto a suitably screwthreaded part of the nib-carrying section of the pen barrel, and to frictionally fit on the removable part of the body or barrel when it is desired to use the pen.

Dated this 27th day of October, 1933.

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

COMPLETE SPECIFICATION.

Improvements in or relating to Fountain or Reservoir Pens.

I, ERIC ERNEST SAMUEL WADE, (British Nationality), of 13, Hope Street, Liverpool, in the County of Lancaster, 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:—

This invention relates to fountain or reservoir pens of the kind in which an air tube of small bore extending longitudinally into the ink reservoir and opening at its upper or inner end to the reservoir and at its lower or outer end to an ink passage of the feed bar co-operates with means for varying the pressure in the reservoir in order to charge the pen with ink. In pens of this kind—although it has been proposed to enclose the air tube in a sac subdivided by constriction into a plurality of small parts—it is usual to provide a small sac on the rear end of the rigid body or barrel which constitutes an ink container or reservoir, or a plunger-like element reciprocally disposed in such end of the barrel, as a pressure varying means, the ink charge being induced through the feed bar directly into the interior of the barrel by repeated collapse and expansion of the small end sac or by reciprocatory motion of the plunger element.

The present invention provides a serviceable yet cheaply constructed pen of the kind referred to, and is essentially characterised in that the pen body or barrel is, in effect, divided at an intermediate point in its length and detachably re-connected by a tubular member in such manner that the bore of the barrel remains of uniform or virtually uniform diameter throughout and contains a rubber ink sac of size and length (i.e. of uniform diameter and substantially filling the pen body or barrel) usually employed in sac self-filling pens and the open end of which sac is connected with the nib-section, and an air tube contained with said sac communicates with a feed bar disposed within said nib-section.

I will further describe my invention with the aid of the accompanying sheet of explanatory drawings which illustrates, by way of examples only, several modes of carrying the invention into effect.

In said drawings:—

Fig. 1 is a longitudinal section of a pen according to one construction.

Figs. 2 and 3 are fragmentary sections showing alternative modes of associating the ink sac with the nib-section.

In the several views, like characters of reference denote like or equivalent parts wherever they occur.

Referring to the drawings, but first, more particularly to Fig. 1:—

a, a^1 denotes a reservoir body or barrel (which may be made of any suitable inexpensive and not necessarily ink-proof material), b a nib-section, c a feed bar disposed within said nib-section, and d a writing nib.

Disposed within said body or barrel a, a^1 is a collapsible rubber ink sac e of the kind (i.e. of uniform diameter and adapted to substantially fill the pen barrel) usually employed in self-filling reservoir pens and therefore of large ink-holding capacity, and which sac is connected at its open end, by means of a thin metal band or in other convenient manner, to a reduced extension b^1 provided on the rear or inner end of said nib-section b: an air tube f of small bore extending into the interior of said sac e terminates at its upper or inner end some distance from the closed end e^1 of the sac and is frictionally anchored at its lower or outer end within a central passage c^1 of the push-in feed bar c located in the passage b^2 of said nib-section b. Said air tube f communicates with the customary feed channel c^2 of said feed bar c by way of a lateral orifice or duct c^3 formed in the bar.

Below said reduced sac-holding extension b^1 of nib-section b is a somewhat larger shank portion b^3 arranged to make a friction-tight fit in the lower or outer end portion of the barrel which is, in effect, divided at an intermediate point in its length and then detachably recon-

nected by a small tubular member g having a part g^1 firmly secured in the barrel portion a associated with the nib-section b and a second part g^2 externally screw-threaded to receive a correspondingly tapped portion of barrel section a^1: thus said section a^1 may be readily removed to expose the end e^1 of the sac e—which end e^1 upon being repeatedly collapsed and expanded by finger manipulation, charges the sac with ink consequent on air pressure fluctuations within the interior of the sac and air tube—and the bore of the barrel remains of uniform diameter throughout.

A nib-protecting cap of usual construction may be provided to screw on to the end of the barrel carrying the nib-section.

In the modification illustrated in Fig. 2, the mouth of the ink sac e is provided with a bead-like reinforcement or enlargement e^2 which is compressed to effect an air tight joint between an annular shoulder or abutment a^2 provided on the lower end of the bore or barrel section a and a washer h on the screwing in of the nib-section b in customary manner: or, alternatively, the open end of ink sac e may terminate in a conical or flared annular flange e^3—see Fig. 3—which is also adapted to be compressed to make an air-tight joint between correspondingly formed annular-surfaces h^1, a^3 provided on the washer h and barrel section a respectively, upon application of the nib-section b.

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 fountain or reservoir pen of the kind hereinbefore referred to, characterised in that the body or barrel is, in effect, divided at an intermediate point in its length and detachably reconnected by a tubular member in such manner that the bore of the barrel remains of uniform or virtually uniform diameter throughout and contains a rubber ink sac of size and length (i.e. of uniform diameter and substantially filling the pen body or barrel) usually employed in sac self-filling pens and the open end of which sac is connected with the nib-section, and an air tube contained within said sac communicates with a feed bar disposed within said nib-section.

2. A fountain or reservoir pen substantially as hereinbefore described and illustrated in the accompanying drawings.

Dated this 15th day of March, 1934.

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Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1934.

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

Fig. 1.

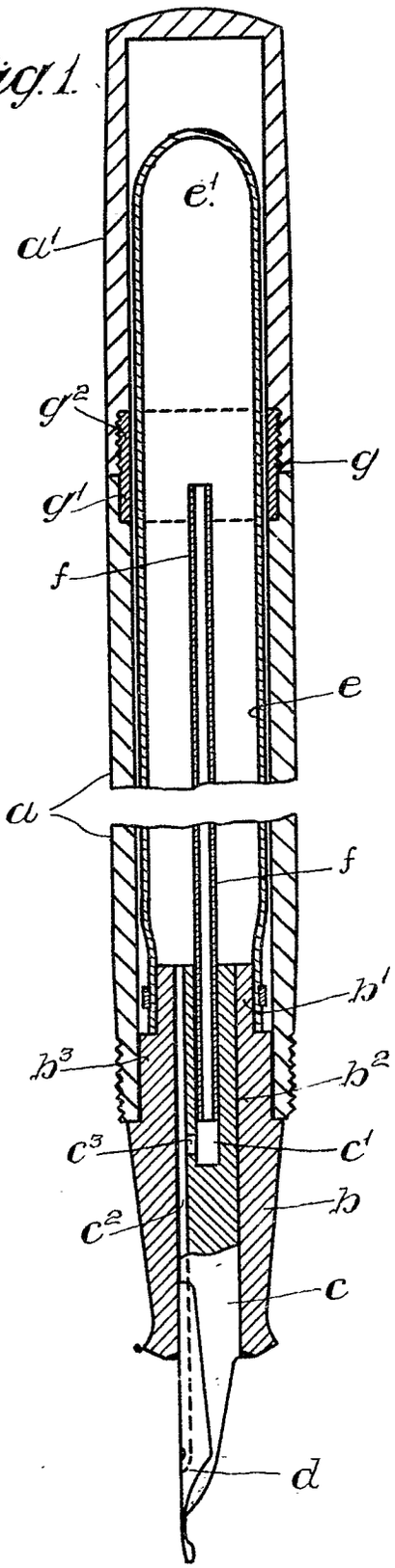


Fig. 2.

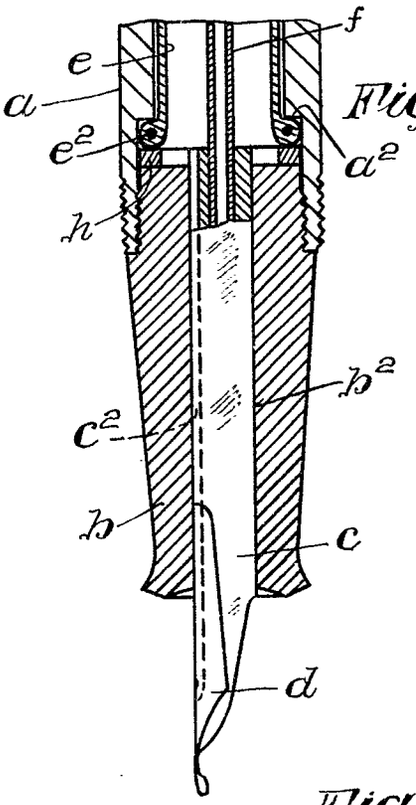
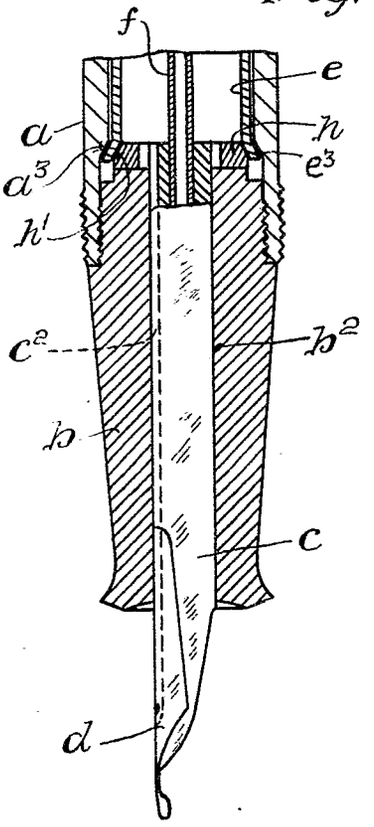


Fig. 3.



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