

# PATENT SPECIFICATION

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PROVISIONAL SPECIFICATION.

## Improvements in and relating to Fountain Pens.

We, LIONEL GUNSBERG, British, of 3, Broxholm Road, West Norwood, London, S.E. 27, and EMANUEL FELDORF, Dane, of 28, Onslow Avenue, Richmond, Surrey, do hereby declare the nature of this invention to be as follows:—

Our invention relates to fountain pens of the type in which a small plunger is located at the end of the barrel for the purpose of collapsing the ink bag in the process of refilling the pen. In one example of this type of pen a short axial plunger is situated at the extreme end of the ink barrel and is usually contained within a small cover or cap. In operation the plunger is depressed by the thumb or finger for a distance of a few millimetres and acts against the spring element of the presser bar so as to deflate the ink bag. On releasing the plunger the bag fills and the plunger is restored to its original position.

According to our invention we dispense with the necessity of removing the end cap prior to securing access to the filling plunger and provide suitable means for actuating the aforesaid plunger from the top of and externally to the covering cap.

Preferably our actuating means consist of a button made of vulcanite or other suitable material, which button slides longitudinally through the end cap or cover. It stands proud of the end cap or cover, the necessary distance to correspond with the travel of the axial plunger. By a pressure downwards the plunger is depressed, with a release it automatically springs in its resting position.

At the lower end of the button, which comes in contact with the axial plunger, one half is cut away for a short distance, this to correspond with part of the threads cut away on the back end of barrel where the end cap or cover screws on.

The button is so made as to slide longitudinally in the end cap or cover, and also to rotate with it. This probably by

[Price 1/-]

means of two grooves, opposite each other in the end cap or cover, with a pin through the button to engage both grooves, or by a slot cut longitudinally in the button and a pin passed through end of cap or cover and through slot in the button.

By rotating the end cap or cover for one half turn, the button is then so rotated into position allowing the button, by reason of the removal of half of its width, to be depressed to the full extent required, and thus actuating the axial plunger. By releasing the button, and screwing home the end cap or cover, the button is held fast and cannot accidentally operate the plunger, which could only be operated by first giving one half turn to the end cap or cover.

In this type of pen the difficulty is always to obtain a sufficient supply of ink, and in order that a larger bag may be used in the same bore of barrel, we cut a channel nearly the whole length of the inside of the barrel, of a sufficient width to allow the presser bar, which is actuated by the axial plunger to fit in as it were, a recess. This channel permits of the presser bar being flush or level with the inside bore, thus permitting a larger bag to be used, as the complete bore of barrel can be occupied with bag, whereas in the type at present in use the presser bar being alongside the inside bore, and being of about one millimetre thickness, the bag has to be a proportionate size, and the one millimetre space as occupied by the presser bar leaves a space on practically all sides of the bag, which cannot be used without having a partially deflated bag. By cutting this channel it adds to the capacity about 25%, and at the same time permits the bag to be easily put into the barrel.

Dated the 4th day of February, 1926.

LIONEL GUNSBERG,  
EM. FELDORF.

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## COMPLETE SPECIFICATION.

## Improvements in and relating to Fountain Pens.

We, LIONEL GUNSBERG (British), 3, Broxholm Road, West Norwood, London, S.E. 27, and EMANUEL FELDORF (Dane), of 28, Onslow Avenue, Richmond, Surrey, 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:—

10 Our invention relates to fountain pens of the type provided with an end plunger for the purpose of bending a spring for collapsing the ink bag and so refilling the pen with ink. More particularly our

15 invention relates to pens of this type wherein the end of the deflating spring is attached to a plunger which projects through a centrally-bored end plug, the projecting end of the plunger being normally protected by an end cover or cap.

20 It has already been proposed to actuate the plunger for bending the spring by means of a cam surface on the plunger co-operating with a corresponding cam surface on a member rotatable in the end of the barrel. It has also been proposed to actuate the spring by means of a non-rotatable plunger moved longitudinally by means of a screw-threaded rod secured to a rotatable head-piece on the barrel.

30 According to our invention; one form of device for actuating the plunger from the top of and externally to the covering cap, consists of a button sliding longitudinally and rotatable in the end cap or cover, the button being normally held against depression by contact with a fixed part of the pen barrel but being freed for relative longitudinal movement when rotated through a small angle. When pressed downwards the button, in its operative position, depresses the plunger and deflates the ink bag.

45 Alternatively in order to avoid cutting away the screw thread, and so weakening the joint between the cap and barrel, we may replace the button by a small transverse cam or lever fulcrumed on a pin running through the top of the cap. One end of the lever is raised by the thumb or finger to depress the other end, which in turn depresses the plunger and deflates the ink bag.

55 In the accompanying drawings, Fig. 1 is a longitudinal section through the plunger end of the pen barrel showing button presser in situ, Fig. 2 is a pictorial view of the button element, Fig. 3 shows

an alternative form in which a cam or lever takes the place of the button.

Referring to Figs. 1 and 2, a portion of the ink bag is shown at A together with the deflating spring B fitted with the usual plunger C to take the thrust of the presser button D.

A portion of the screw threaded plug on the barrel part of the pen is cut away leaving a projecting part E. The button D is also cut away at its lower end as shown in Figure 2 and is provided with a projecting portion E<sup>1</sup> to engage the plunger C and also a pin F which is driven through the outer cap G, and serves to hold the button in position.

Normally the projecting part H of the button abuts against the projecting part E of the cut-away screw thread, so as to prevent any longitudinal movement of the parts.

In order to fill the pen, the outer cap G is rotated through a small angle so as to disengage the abutting parts of the screw thread and button. The button can then be depressed, thus forcing the metal plunger C inwards and curving the spring B to deflate the ink bag A.

When the pin has been filled, the outer cap G is twisted back to its original position with the lower end H of the button abutting against the projecting end E of the screw-threaded plug.

In the alternative construction shown in Fig. 3, a cam-shaped lever K is fulcrumed on a pin L inserted across the upper end of the outer cap G, the sides of which are slotted in order to house the lever.

In its normal or horizontal position the curved face of the lever K rests against the top of the plunger C. One end of the lever projects slightly beyond the side of the outer cap G and is serrated or knotted at K<sup>1</sup> to allow it to be raised by a rubbing pressure with the thumb or finger.

When so raised the other end of the lever is naturally depressed, and thus engages the top of the plunger C, which in turn is forced inwards to deflate the ink bag as before.

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

1. A fountain pen of the type specified

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in which the end of the deflating spring is attached to a small plunger projecting through a centrally bored screw plug located at the end of the barrel, characterized by the provision of means for actuating the plunger from the top of an end cover or cap surrounding the aforesaid plunger, comprising a sliding and rotatable button piece mounted in the covering cap, the button being normally held against depression by contact with a fixed part of the pen-barrel, but being freed for relative longitudinal movement when rotated through a small angle substantially as described.

2. A modification of the fountain pen as set out in Claim 1 in which the actuating means comprises a cam or lever fulcrummed at the upper end of the covering cap substantially as described.

3. Fountain pens constructed substantially as described and illustrated in the accompanying description and drawings.

Dated this 4th day of November, 1926.

JOHN HINDLEY WALKER,  
139, Dale Street, Liverpool,  
Applicants' Patent Agent.

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

Fig. 1.

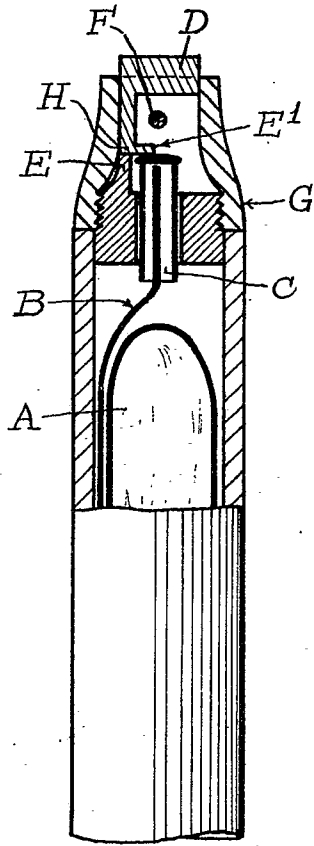


Fig. 3.

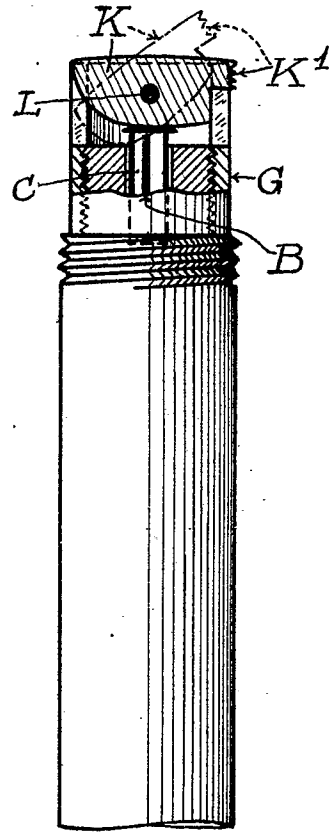


Fig. 2.

