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Complete Specification Left, 16th June, 1910—Accepted, 27th Oct., 1910

PROVISIONAL SPECIFICATION.

Improvements in and connected with Fountain Pens and the like.

I, HERBERT GORNELL, of 13, Hope Street, Liverpool, in the County of Lancaster, Foreman, do hereby declare the nature of this invention to be as follows:—

This invention has reference to fountain pens and the like; and has reference
5 more particularly to so-called self-filling fountain pens provided with a piston or plunger, and rod actuating means whereby the barrel of the pen is recharged with writing fluid; and one of the objects and effects of this invention is to provide an improved means for recharging pens of this character, whereby practically the whole of the parts by which the recharging is effected, are
10 enclosed in the pen barrel, without prolonging the length of same, or making additions thereto for enclosing such parts; further by this invention a pen is provided which is simple in construction, inexpensive to manufacture, and cleanly in use either when used for writing, or when being recharged.

In the following description of a fountain pen the improvements under this
15 invention are involved.

The fountain pen comprises a barrel or reservoir for the writing fluid closed at the rear end and fitted with a nib holder at the other end, both the closed end and the nib holder being adapted to receive a nib cap or cover.

20 Within the barrel is fitted a tubular sleeve, which extends for a portion of the length thereof, preferably about one half, and at its forward or nib end is fitted a plunger or piston adapted to make a working fit with the said barrel.

The sleeve is longitudinally slotted for the greater portion of its length, and at each end of the slot, notches or recesses are formed in communication therewith. The sleeve is adapted to receive a longitudinally extending rod,
25 which is provided with a pin or projection at one end, adapted to engage with the said slot and notches; and a knob, handle or other means at the other end whereby the rod is actuated.

The rod is adapted to project through a hole or bore formed in the closed rear end of the barrel and to make a working fit therewith, the knob, handle
30 or the like thereon being outside the barrel and adapted to come in contact with the closed end thereof, when the actuating rod is in the closed position, and not in use.

To charge or recharge the pen barrel, the rod is partially rotated or turned through the medium of the said knob, for the purpose of disengaging the pin
35 or projection on the rod, from one of the notches, and moving it into the slot. the rod is then withdrawn a distance equal to the length of the slot and rotated to engage the pin or the like with the notch in the other end of the slot; the sleeve with its piston is then moved or pushed towards the nib end of the pen, and then the nib is inserted in a quantity of writing fluid, and the
40 sleeve and piston returned again to their original position, such action causing ink to be drawn or sucked into the barrel and the latter to be charged therewith.

After the charging has been effected, the rod is rotated and moved in the

[Price 8d.]



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opposite direction to that previously stated, so as to return it to its original inoperative position within the sleeve and barrel, with the knob thereon against the rear end of the pen.

The knob, handle or equivalent, is so constructed as to afford ready means for actuating the rod and at the same time permit of the nib cap being placed 5 on the rear end of the pen in the usual way.

If desired means may be provided for preventing the rod turning when not in use, such as a pin, spring clip, detent, or the equivalent thereof, adapted to engage with a groove, notch or the like formed in the knob, or a *vice versa* 10 arrangement may be provided for this purpose.

Although a specific form of slotted and notched sleeve has been described above, it will be obvious that the same may vary without departing from the essence of the invention, that is means for positively engaging the rod with the sleeve, at each end of the slot, and permitting it when not so engaged to move longitudinally relatively thereto; such for instance, the notches may 15 both be on the one side of the slot; or there may be two or more of such slots, diametrically or otherwise disposed relatively to each other, and the rod provided with two or more pins or projections to engage therewith; or the sleeve may have a closed end and be adapted to be partially withdrawn from the barrel, and caused to engage with an extension enclosed therein, such as a 20 rod, or may be another sleeve in a similar manner to that set forth above.

Dated this 15th day of December, 1909.

E. R. ROYSTON & Co.,
Applicant's Patent Agents,
Tower Building, Water Street, Liverpool, and 25
265, Strand, London.

COMPLETE SPECIFICATION.

Improvements in and connected with Fountain Pens and the like.

I, HERBERT GORNELL, of 13, Hope Street, Liverpool, in the County of Lancaster, Foreman, do hereby declare the nature of this invention and in what 30 manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention has reference to fountain pens and the like; and has reference more particularly to so-called self-filling fountain pens provided with a piston or plunger, and an extendible rod actuating means whereby the barrel of the 35 pen is recharged with writing fluid, and the whole of the parts by which the recharging is effected, are enclosed in the pen barrel when in their normal position, without prolonging the length of same; and the object of this invention is to improve this kind of pen as well as to produce one which is simple in construction, inexpensive to manufacture, and cleanly in use either when 40 used for writing, or when being recharged, and will not get out of order.

In the following description of a fountain pen, the improvements under this invention are involved, and in the accompanying drawings in connection with which the description is made, the improvements are illustrated.

Figure 1 is a longitudinal section of a pen barrel as ready for use but with 45 the nib and holder not shewn; and

Figures 2 and 3 are similar views shewing the barrel and internal arrangements in different positions while the pen is being charged.

The fountain pen comprises a barrel or reservoir *a* for the writing fluid

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closed at the rear end by a screwed plug or cap *b*, and fitted with a nib holder at the other end, both the plug or cap *b*, and the nib holder, being adapted to receive a nib cap or cover.

5 Within the barrel *a* is fitted a tubular sleeve *c*, which extends for a portion of the length thereof, preferably about one half, and which is closed at the inner end, but open at the outer end; and at its forward or nib end is fitted a plunger or piston *d*, adapted to make a working fit with the barrel *a*.

10 The sleeve *c* is provided with a longitudinal slot *e* for the greater portion of its length; and at each end of the slot, notches, or recesses, *f* in communication with it, are provided.

The sleeve *c* is adapted to receive a longitudinally extending rod *g*, which, at one end, is provided with a pin or projection *h* adapted to engage with the slot *e* and notches *f*; and at the other end, with a knob *i* handle or other means by which it is actuated; and it is so arranged and constructed that the inner 15 end of the rod *g* does not pass through the piston *d*, so avoiding the possibility of leakage through the joint, which would exist, if the rod *g* passed through the inner end of the piston.

20 The rod *g* is adapted to project through a hole or bore formed in the closed rear end cap *b* of the barrel *a*, and to make a working fit therewith; the knob *i* handle or the like upon it alone being outside the barrel *a*, and adapted to come in contact with the closed end cap *b* when the actuating rod *g* is in the closed position, and not in use, as shewn at Figures 1 and 3.

25 It has been before heretofore proposed to provide self-filling fountain pens in which the piston or plunger is moved or actuated by extendible means, such as rods and tubes, some of which have slots and notches in one part, and pins or projections in the other to engage the notches, and in some of those cases, the extendible actuating means passes through a cap or closed end on the barrel, whilst in other cases, the end of the barrel through which they work has had no closed end. In some cases where the extendible actuating means works through 30 the closed end or cap on the end of the barrel, only the handle of the piston actuating rod has been outside the pen barrel when such is ready for use, while in other cases, special addition caps besides the nib cap have been used, so as to enclose the actuating means after it has been used to fill the barrel, which will in this position project out of the barrel proper at the closed or capped end. 35 Therefore, I make no claim to these characteristics generally hereunder.

On the other hand, in the pen hereunder the body or barrel and piston or plunger actuating parts are so arranged and constructed, that not only does the barrel proper contain within it, when the actuating parts are in their normal position and condition—*i.e.*, after its use—the whole of these extendible 40 parts, except the actuating knob which is taken hold of by the fingers, which is just outside the end closing cap *b*; but also, the piston itself is imperforate, and the actuating rod *g* does not pass through it, so avoiding the possibility of leakage, which would take place if the rod *g* passed through the inner end of the piston.

45 To charge or recharge the pen barrel *a*, the rod *g* is partially rotated or turned through the medium of the knob *i*, for the purpose of disengaging the pin *h*, or projection on the rod, from one of the notches *f*, and moving it into the slot *e*. The rod *g* is then withdrawn a distance equal to the length of the slot *e*, and again rotated in the same direction as before to engage the pin *h*, or 50 the like with the notch *f*, in the other end of the slot *e*, as in Figure 2. The sleeve *c*, with its piston *d*, is then moved or pushed towards the nib end of the pen, as shown at Figure 3; and then the nib is inserted in a quantity of writing fluid, and the sleeve *c* and piston *d* returned again to their original position as shown at Figure 2, this action causing ink to be drawn or sucked into the 55 barrel *a*, and the latter to be charged with it.

After the charging has been effected, the rod *g* is rotated so that the pin or projection *h* is rotated and moved in the opposite direction to that previously

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stated, so as to return it to its original inoperative position, as shown at Figure 1, within the sleeve *c* and barrel *a* with the knob *i* against the rear end cap *b* of the pen.

The knob handle *i* or its equivalent, is so constructed as to afford ready means for actuating the rod, and at the same time permit of the nib cap being placed on the rear end of the pen in the usual way. 5

If desired, means may be provided for preventing the rod *g* turning when not in use, such as a pin, spring clip, detent, or the equivalent thereof, adapted to engage with a groove, notch or the like formed in the knob, or a *vice versa* arrangement may be provided for this purpose. 10

Although a specific form of slotted and notched sleeve has been described above, it will be obvious that the means for positively engaging the rod with the sleeve, at each end of the slot, and permitting it when not so engaged to move longitudinally relatively thereto may vary without departing from the essence of the invention. For instance, the notches may both be on the one side of the slot; or there may be two or more of such slots, diametrically or otherwise disposed relatively to each other, and the rod provided with two or more pins or projections to engage therewith. 15

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:— 20

1. In a self-filling fountain pen or the like of the kind in which the piston or plunger is moved by extendible actuating means, and wherein the inner part of said extendible piston and plunger actuating means to which the piston or plunger is connected, is in all positions within the barrel proper of the pen, the construction of parts wherein and whereby the other rod or part actuated by the hand direct, does not pass through the piston or plunger, and the piston or plunger is imperforate; substantially as set forth. 25

2. The self-filling fountain pen having parts arranged and adapted to be actuated as set forth with reference to and shown in the drawings. 30

Dated the 14th day of June, 1910.

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Applicant's Patent Agents,
Tower Building, Water Street, Liverpool, and
265, Strand, London, W.C. 35

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

Fig. 1.

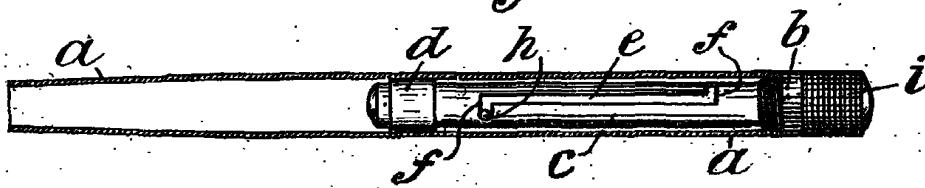


Fig. 2.

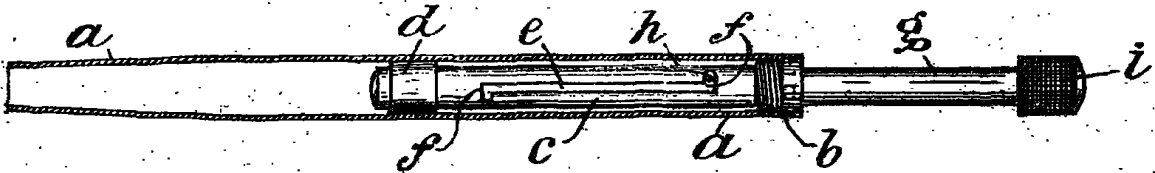
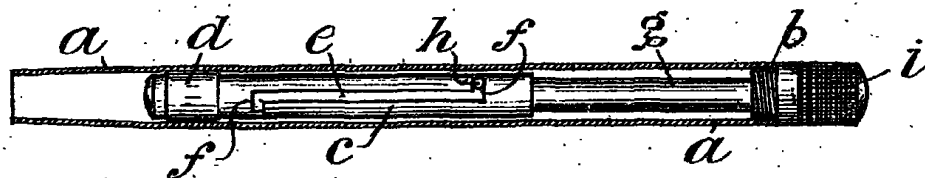


Fig. 3.



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