

PATENT SPECIFICATION

595.652

No. 15199/45.



Application Date: July 15, 1945.
Complete Specification Left: June 11, 1946.
Complete Specification Accepted: Dec. 11, 1947.

PROVISIONAL SPECIFICATION

Improvements in or relating to Fountain Pens

We, MABIE, TODD & COMPANY LIMITED (a Company organised under the Laws of Great Britain and Northern Ireland), and EDWARD STEPHEN SEARS (British Nationality), both of 41, Park Street, Mayfair, London, W.1., do hereby declare the nature of this invention to be as follows:—

This invention relates to fountain pens of sac self-filling type and in which actuation of the sac is effected by means of a rotary knob-plug closure (in contra-distinction to the customary method of sac actuation by means of a lever located at a side of the pen body or barrel), it being merely necessary in a sac-charging operation to unscrew the knob, immerse the nib in the ink, and—with the necessary pause before removing the nib from the ink—screw back the knob to normal position.

The objects of the present invention are, in a pen of the type defined, more efficient filling means, economy in manufacture, and substantial reduction in stresses and tension on the sac-actuating "movement" and sac, thereby prolonging the efficient working life of the pen.

A fountain pen, according to our invention, functions in a filling operation in the following characteristic manner:—On unscrewing said knob, a presser plate-carrier is drawn towards a shoulder or stop at the rear end of the body bore, causing the presser plate to slide down an angled part of the plate-carrier and across the body, until the back end of the presser plate is pressing against the closed end of the sac: continuation of the unscrewing of the knob then brings a back-bar into operation, with one end abutting against said body shoulder, and said bar proceeds to carry the other end of the presser plate nearest the nib across the body bore to the opposite side, thus completely deflating the sac.

On screwing back the knob to its normal position, the movement of the presser plate and back-bar is reversed, i.e. assuming the end of the presser plate attached to its angled carrier is X and the opposite end is Y, the complete movement would be X—Y on the outward movement of the knob and Y—X on the return movement,

thus achieving a natural movement of sac deflation and inflation. The medium for returning the bar across the body to normal is the sac as it inflates.

It is to be understood, that—apart from the effect of slight tolerances necessarily provided for in the assembly of fountain pen parts—said presser plate at no time during the filling operation rides along the sac, as the angle of the plate-carrier corresponds with the distance covered by the knob during the operation of filling: in short, the presser plate moves across the body bore in a direct line as described, X—Y, Y—X.

Also included in our invention is a means of increasing ink space by dispensing with the usual step or shank provided for the reception of the sac on the nib holder, and substituting therefore a threaded plug, thus increasing the length of the sac available for deflation.

The body in a preferred construction of pen under our invention is bored to suitable size for nearly its full length, a secondary bore of smaller diameter being continued through the remainder: the shoulder thus formed functions as a stop to limit outward movement on unscrewing of the knob, as the plate-carrier abuts against the shoulder when the knob is unscrewed. Said secondary bore is threaded to freely receive the threaded part of the knob, and the body is threaded externally in known manner to receive the cap.

The nib holder may be of common design outwardly, with stepped portion or shank corresponding to the size of, and fitting frictionally in, the main bore of the body.

A bore is made for the accommodation of the feed and the nib in known manner: this bore is enlarged at the opposite or shank end to a suitable depth and size, and screw-threaded to freely receive said threaded plug. This threaded bore is countersunk almost to the periphery of the shank, at approximately 90°, or other suitable angle.

The sac-actuating knob which may be roughened or knurled is made to conform with the outer shape of the pen body at the large end, a stepped portion or shank

[Price 1/-]

of the knob being threaded to correspond with the thread of the secondary bore in the body in which it should move freely. This threaded portion of the knob is bored and threaded to receive a carrier-screw.

The feed may be of common form and of suitable size and length, but an angle or slope is cut at the end which abuts against said threaded plug to allow free flow of the ink to the nib. Said plug is suitably bored, and the bore may be channeled on one or both sides, longitudinally, for its entire length, to facilitate flow. One end is threaded externally for free attachment in the nib holder. A recess is formed circumferentially at the end of the thread and an outwardly sloping or enlarged portion as a continuation of the recess at an angle corresponding to that in the nib holder.

Said plate-carrier, in one convenient construction, may be formed from a single length of wire of suitable diameter and sufficiently malleable for shaping, and preferably protected by plating or the like: its configuration approximates a trapezium with top or looped portion at right angles with the two sides, and, one side being shorter than its opposite, the bottom member forms a slope or angle towards the nib point. The top or part of the carrier adjacent the threaded end of the knob is looped at its centre, or in other words, one end of the length of wire is looped to freely receive the carrier-screw. The carrier is then shaped to the desired form, the free end of the wire of which it is composed finishing on the opposite side of the loop; and, in a preferred formation, this latter end is left unattached, as it may be found that attachment is not essential with the incorporation of a screw-washer. This free end of the carrier makes for ease of assembly with regard to the presser plate, and also allows for a certain amount of adaptation, as the carrier should, preferably, be a sliding fit in the bore of the body to obviate fouling or undue gripping on the wall of the bore whilst being to a certain extent adaptable to the size of the bore.

The presser plate may be of known form in so far as the usual narrow ribs longitudinally and at right angles with the face are concerned and may be a separate unit, or both plate and back-bar may be formed from one strip of metal by turning the strip completely back on itself at a suitable point at the nib end. In a preferred arrangement, however, the presser plate and back-bar are separate units, the presser plate being adapted for attachment to the back-bar at the end nearest the nib point: the opposite end of the

presser plate is drilled through at a suitable distance from this end, and is adapted for free or swinging movement when attached to the sloping or angled part of the plate-carrier.

The back-bar is made from suitable metal; spring steel may be used but experiment indicates that mild steel is quite satisfactory as very little strain or tension is placed upon it. In a preferred embodiment, the back-bar is of metal strip slightly narrower than the width between the ribs of the presser plate into which recess formed by the ribs the bar is positioned when inactive. The end of the bar nearest the nib point is adapted in any suitable manner for swivel attachment to the presser plate: swivel attachment is preferred in furtherance of our object to relieve stress or strain on the "movement" when operative. The opposite end of the back-bar or the end adjacent said shoulder in the bore of the body extends beyond the corresponding end of the presser plate for a suitable distance to a position slightly short of or not quite abutting against the shoulder. In this end of the bar is cut a longitudinal slot sufficiently wide to accommodate freely the short side of the plate-carrier, the length of said slot preferably corresponding with a certain tolerance in excess of the distance covered between the operative and inoperative positions of the plate-carrier and the knob, or *vice-versa*, or, in other words, the distance required in operation for complete sac deflation. This slot of the back-bar serves as a guide for the plate-carrier and, during operation, the bar abuts against said shoulder in the bore of the body, thus preventing any tendency for the "movement" to turn. The sac also assists in holding the "movement" in positions required. The arrangement just described obviates necessity for the expensive processes of slot cutting etcetera in the wall of the bore.

Said carrier screw is, preferably, of metal of suitable size and common form. The thread should be the opposite to the external thread, and corresponding to the internal thread of the knob. The thread on the carrier-screw is cut to leave a plain shank adjacent the head, and the length of the shank should correspond with the combined thickness of the plate-carrier wire and a screw-washer, plus a slight tolerance for free rotation. The end of the thread at the junction of the shank should be sufficient to act as a stop to limit the extent to which the screw is fixable in the knob.

Said screw-washer may be of common ring type, the outside diameter corresponding to the width across the inside of

70

75

80

85

90

95

100

105

110

115

120

125

130

the two sides of the plate-carrier, or, preferably, slightly less. In this position said washer serves to prevent fouling between screw head and loop, in known manner, but its more important function is to support the free end of the plate-carrier and obviate necessity for attachment of the free end to the loop. This arrangement has been proved by experiment to be more than sufficient to withstand stress during the operation of filling, and simplifies manufacture and assembly. The concentric hole in the screw-washer should be of a diameter which allows free rotation of the carrier-screw.

The sac washer is preferably plastic; its outside diameter should correspond approximately with the diameter of the

enlarged end of said threaded plug, and the diameter of the concentric hole should be sufficient to allow the threaded plug with sac attached, to pass through freely. Further, it should be thin enough to adapt itself as a seating for the sac in conjunction with the countersink in the enlarged end of the threaded plug when in reasonably tight contact.

It will be obvious to those skilled in the art that various constructions on the basis of this invention may be made to achieve the same object.

Dated this 22nd day of May, 1945.

JOHN HINDLEY WALKER,

125, High Holborn, London, W.C.1,
and 139, Dale Street, Liverpool, 2.

Chartered Patent Agent.

COMPLETE SPECIFICATION

Improvements in or relating to Fountain Pens

We, MABIE, TODD & COMPANY LIMITED (a Company organised under the Laws of Great Britain and Northern Ireland), and EDWARD STEPHEN SEARS (British Nationality), both of 41, Park Street, Mayfair, London, W.1, 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 sac self-filling fountain pens of the type in which actuation of the sac is effected from the rear of the barrel (i.e. the end of the barrel remote from the nib section) by the aid of a rotary knob or button.

Such back-actuated sac pens of arcuate spring type possess a common disadvantage—shared also by the conventional sac-collapsing lever located at a side of the barrel—in that, as the sac-deflating pressure is imposed on or about the middle of the pressure bar, complete evacuation of air from the sac is not feasible, as there is always a certain space within the sac in the vicinity of its closed end not occupied by ink.

A pen designed to obviate this defect is described in our prior Patent Specification 390,585, in which compression of the sac commences at its closed end, the remainder of the sac being progressively impressed and deflated.

The present invention aims to improve the pen described in our said prior Patent Specification, which enables economy in manufacture and an appreciable reduction in stresses and tension on the sac-actuating parts and sac, thereby prolonging the efficient working life of the pen.

A fountain pen, according to the present invention, is characterised in that there is

included in the knob end of the body bore a member of inclined or angular configuration which is operably associated with or carries a presser plate and is also connected with a rotary knob, and a bar is situated at the back of or at the nib end of said presser plate and is movably associated therewith, unscrewing of the knob causing said presser plate-carrier to be retracted or projected (according to the construction and arrangement of parts), thereby causing, by the aid of a stop, the engaging extremity of the presser plate to move or slide along the inclined or angular part of its carrier and across the body bore to press against and so proceed to deflate the sac from its closed end, continuation of the unscrewing of the knob bringing said back bar or the tail bar associated with the presser plate—as the case may be—into operation, and the bar proceeding to carry—through its consequential angular displacement—the other end of the presser plate, i.e. the end nearest the nib, across the body bore to the opposite side, to continue and complete the deflation of the sac, and screwing of said knob back to its normal position causing the movements of the parts to be reversed and a charge of ink thus induced into the sac.

In one embodiment of our invention, actuation of the ink sac is effected through the retraction of said presser plate-carrier located in the knob end of the barrel, the arrangement being such that in a filling operation, on the unscrewing of the knob the adjacent end of the presser plate is—through abutment of the nearby end of a back-bar connected in swivel or hinged fashion to the presser plate with a shoulder or other appropriate stop situated at the

rear end of the body bore—caused to slide on an inclined or angled part of its carrier from the short to the long side to deflate the closed end of the sac, the sac's deflation being completed through the consequential angular displacement of the back-bar across the body bore.

In another embodiment of our pen, the knob is operable in conjunction with a secondary carrier-actuating screw of faster pitch than that of the knob, and a relatively short tail bar pivotally or hingedly associated with the presser plate at the nib end of the pen and whose free extremity abuts against the nib holder or other appropriate stop; unscrewing of the knob causing the adjacent end of the presser plate to slide up the inclined or angled portion of the carrier from the long to the short side, and thereby to be projected toward the nib end of the pen to deflate the closed end of the sac, completion of the sac's deflation being effected through said abutment of the free extremity of said tail bar against the nib holder or other stop, and the consequential angular movement of its—the tail bar's—end which carries the front end of the presser plate across the body bore.

Also included in our invention is the substitution for the conventional step or shank on the nib holder for reception of the sac, of a threaded plug which is screwed to the nib holder, and wherein is formed a through passage providing direct communication of the sac with the feed, thus increasing the length of sac available for deflation.

The medium for returning the presser plate and back-bar or tail bar, as the case may be, across the body to normal may be the sac itself. If the back-bar is in the form of a spring, expansion of the sac is assisted thereby, but where the back-bar is rigid, it is returned solely by the sac.

Said presser plate-carrier may be of wire bent to form a trapezium, and including a loop wherethrough extends for attachment a screw, or the like, associated with the knob.

We will further describe our invention with the aid of the accompanying sheets of explanatory drawings which illustrate, by way of examples and not of limitation, varying modes of carrying same into effect.

In said drawings, in which Figs. 1 to 9 inclusive, show in general a pen according to one form of embodiment, and Figs. 10 to 14 inclusive, a sac-actuating "movement" of modified construction:—

Fig. 1 is a longitudinal view, partly in elevation and partly in section, of the pen prior to deflation of the sac.

Figs. 2 and 3 are similar views, Fig. 2

showing the sac partially deflated, and Fig. 3 showing the sac fully deflated.

Figs. 4 to 9 inclusive, are detached views of certain of the component parts as follows: Fig. 4 is the sac with plug holder; Fig. 5 is a detached view of plug holder whereto the open end of the sac is secured; and Fig. 6 is a unit assembly of presser plate, back-bar, presser plate-carrier and knob; Figs. 7 and 8 respectively show in plan views the back-bar and presser plate prior to connection; and Fig. 9 comprises views, taken at right angles to each other, of the presser plate-carrier.

Fig. 10 is a longitudinal view, partly in elevation and partly in section, of the pen of modified construction, prior to deflation of the sac; and Figs. 11 and 12 are substantially similar views showing, respectively, the sac when partially deflated and when fully deflated.

Fig. 13 is a plan view of the presser bar, and

Fig. 14 comprises views, taken at right angles to each other, of the sac-actuating tail bar included in this pen's construction.

In the several Figures, like characters of reference denote like or corresponding parts.

Referring to the drawings, but first, more particularly to the pen illustrated in Figs. 1 to 9: A pen body or barrel 1 is bored to suitable size for nearly its full length, a secondary bore 2 of smaller diameter being continued through the remainder: the shoulder 3 thus formed functions as a stop to limit outward movement on unscrewing knob 4, as the rear portion 5a of a member 5a, 5b, 5c, located in the knob end of body 1, and carrying a presser plate 6, abuts against said shoulder 3 when knob 4 is unscrewed: situated at the back of said presser plate 6 is a back-bar 7. Said secondary bore 2 is screw-threaded, as shown, to freely receive the threaded part 4a of knob 4, and body 1 is threaded externally in known manner to receive a conventional cap closure.

The nib holder 8 may be of common design outwardly, with stepped portion or shank 8a corresponding to the size of, and fitting frictionally in, the main bore of body 1.

A bore is formed in said nib holder 8 for the accommodation of the feed 9 and nib 10 in known manner: this bore is enlarged at the opposite or shank end to a suitable depth and size, and is screw-threaded to freely receive a threaded plug 11. Said holder-bore shank 8a is countersunk, as shown, at the end remote from the nib 10 at a suitable angle.

The sac-actuating knob 4, which may be roughened or knurled, is made to conform with the outer shape of body 1 at the end remote from the nib, the stepped portion or shank 4a of the knob being threaded to correspond with the thread of the secondary bore 2 of body 1 in which it should move freely: said externally threaded portion 4a of knob 4 is bored and internally threaded to receive a carrier-screw 12.

Feed 9 may be of common form and of suitable size and length, but an angle or slope—as shown—may be cut at the end which abuts against said threaded plug 11 to allow free flow of the ink to nib 10. Said plug 11 is suitably through-bored, and one or more longitudinal channels may be cut in its interior wall to facilitate ink flow: a portion of plug 11 is threaded externally for free attachment in the nib holder 8. An outwardly sloping portion 11c of plug 11 forms a continuation of a recess 11a provided for the reception of the open end of sac 13 and at an angle corresponding to that in the nib holder; and a countersink 11b at a corresponding angle may be made in the upper side of this enlarged part of the plug to facilitate ink flow from sac 13.

A washer 14 of suitable thickness, and preferably made of one of the materials known as "plastics", surrounds the open end of sac 13, and is of sufficient pliability to be readily adaptable to seat and adapt itself to the aforementioned angles of nib holder 8 and outwardly sloping portion 11c of plug 11.

Said presser plate-carrier, in one convenient construction, and as illustrated, may be formed from a single length of wire of suitable diameter and sufficiently malleable for shaping, and preferably protected by plating, or the like; its configuration approximates to a trapezium with top or looped portion 5a at right angles with the two sides 5b, one side being shorter than its opposite: the bottom member 5c forms a slope or angle towards the nib. The top 5a or part of the carrier adjacent the threaded end of knob 4 is looped at its centre, or, in other words, one end of the length of wire is looped to freely receive said headed carrier-screw 12 secured in knob 4. The carrier is then shaped to the form shown, the free end of the wire of which it is composed finishing on the opposite side of the loop; and, in a preferred formation, this latter end is left unattached as it may be found that attachment is not essential with the incorporation of a washer 15. This free end of the carrier makes for ease of assembly with regard to presser plate 6, and also allows for a certain amount of adapta-

tion, as the carrier should, preferably, be a sliding fit in the bore of the body to obviate fouling or undue gripping on the wall of the bore, whilst being to a certain extent adaptable to the size of the bore.

The presser plate 6 may be of known form, in so far as the usual narrow ribs 6a (Fig. 6) longitudinally and at right angles with its face are concerned, and may be a separate unit; or both plate 6 and back-bar 7 may be formed from one strip of metal by turning the strip completely back on itself at a suitable point at the nib end. In a preferred arrangement, however, the presser plate and back-bar are, as illustrated, separate units, the presser plate being hingedly connected to the back-bar at 16, the end nearest the nib point: the opposite end of the presser plate is drilled through at 17 (Fig. 8) and is adapted for free movement when attached to the sloping or angled part 5c of the plate-carrier 5a, 5b, 5c.

Said back-bar 7 is made from suitable metal; spring steel may be used, but experiment indicates that mild steel is quite satisfactory, as very little strain or tension is placed upon it. In a preferred embodiment, said back-bar is a metal strip slightly narrower than the width between the ribs 6a of the presser plate 6, and in the recess formed by said ribs the back-bar is positioned when inactive. The end of the back-bar nearest the nib is adapted in any suitable manner for swivel attachment to the presser plate 6: swivel attachment is preferred in furtherance of our object to relieve stress or strain on the "movement" when operative.

The opposite end of back-bar 7, i.e. the end adjacent said shoulder 3 of the secondary bore 2 of the body, extends beyond the corresponding end of presser plate 6 for a suitable distance to a position slightly short of or not quite abutting against the shoulder 3. In this end of the back-bar 7 is cut a longitudinal slot 7a sufficiently wide to accommodate freely the short side 5b of the plate-carrier, the length of said slot 7a preferably corresponding with a certain tolerance in excess of the distance covered between the operative and inoperative positions of the plate-carrier 5a, 5b, 5c, and knob 4, and *vice versa*; or, in other words, the distance required in operation for complete sac deflation. This slot 7a of the back-bar 7 serves as a guide for the presser plate-carrier and, during operation, the back-bar abuts against said shoulder 3 in the bore 2 of the body, thus preventing any tendency for the "movement" to turn. The sac 13 itself also assists in holding the "movement" in positions required. The arrangement just described obviates necessity for expensive

processes, such as slot cutting, in the wall of the body bore.

Said carrier screw 12 is, preferably, of metal of suitable size and common form; its thread should be the opposite to the external thread, and corresponding to the internal thread of the knob extension 4a. The thread of the screw 12 is cut to leave a plain shank 12a adjacent its head, and the length of the shank should correspond with the combined thickness of the presser plate-carrier wire and washer 15, plus a slight tolerance to permit of free rotation. The end of the thread at the junction of the shank should be sufficient to act as a stop to limit the extent to which the screw 12 is fixable in knob 4.

Alternatively, the attachment of the carrier to the knob may be formed, with the necessary limits, by a bore of definite depth in the knob 4 and a screw 12 of a definite length, the end of the bore in the knob 4 functioning as a stop to limit the distance the screw is inserted. Or the connection may be in the shape of a split press-stud of known form, the bore in the knob 4 being adapted to accommodate this type of attachment.

Said washer 15 may be of common ring type, the outside diameter corresponding to the width across the inside of the two sides 5b of the presser plate-carrier, or, preferably, slightly less. When in position said washer serves to prevent fouling between the head of screw 12 and the loop of the presser plate-carrier in known manner, but its more important function is to support the free end of the presser plate-carrier and obviate necessity for attachment of the free end to the loop. This arrangement has been proved by experiment during the operation of sac filling, and simplifies manufacture and assembly. The concentric hole in washer 15, which is preferably of metal, should be of a diameter which allows free rotation of carrier screw 12.

In a pen filling operation, on the unscrewing of knob 4, and consequential retraction of presser plate-carrier 5a, 5b, 5c, the adjacent end of presser plate 6 is caused to move down the inclined carrier component 5c—i.e. from the short to the long side—and proceed to compress the sac 13 from its closed end by engagement of the back-bar 7 with shoulder 3, or other appropriate stop; then back-bar 7 associated at 16 with presser plate 6 is brought across the body bore to complete the sac's deflation preparatory to the induction of an ink charge as hereinbefore described, and resumption of the parts to positions as before actuation.

Assuming that the end of the presser plate 6 attached to its angled carrier 5a,

5b, 5c, is "X" and the opposite end is "Y", the complete movement will be "X—Y" on the outward travel of knob 4, and Y—X on the return movement of the knob, thus achieving a natural movement of sac deflation and inflation.

It is to be understood, that—apart from the effect of slight tolerances necessarily provided for in the assembly of fountain pen parts—said presser plate at no time during a filling operation rides along the sac, as the angle of the plate-carrier corresponds with the distance covered by knob 4 during a filling operation: in short, the presser plate 6 moves across the body bore in a direct line as stated, X—Y, Y—X.

In said X—Y, Y—X movements, the Y travel across the body bore is approximately two and a half times faster than that of X along the angle 5c of the plate-carrier. This is an advantage in ink filling as the sac is almost completely filled by the time knob 4 is screwed home, thus rendering almost unnecessary the customary pause essential with sac self-filling pens of conventional construction before removing the pen from the ink.

Referring now to the pen illustrated in Figs. 10 to 14, inclusive, of the drawings:—

20 indicates a screw non-rotatably engaging in the knob screw 4a and of faster pitch than that of the latter. The rear portion 5a of presser plate-carrier 5a, 5b, 5c is secured between washers 21 mounted on a headed plug 20a which is affixed in said fast pitch screw 20. Also, there is formed or provided on the inner end of said knob screw 4a a collar 20b which, by abutment against a stop piece 1a secured within the end of barrel 1, limits the outward travel of knob screw 4a and so of knob 4.

22 denotes a short tail bar or plate pivotally or hingedly associated at 23 with the presser plate 6 and normally resting against the end of the nib holder 8 adjacent to the open end of sac 13.

In a sac-charging operation, when the rear knob 4, 4a is unscrewed outward to deflate sac 13, the secondary fast pitch screw 20 is projected forwardly toward the nib end of the pen, and the adjacent end of presser plate 6 slides up the inclined portion 5c of the carrier from the long to the short side to deflate the closed end of the sac; furtherance of the sac's collapse being effected by abutment of the free end of said tail bar 22 against the nib holder 8, with consequential angular movement of the tail bar 22, which carries the front end of presser plate 6 across the body bore to complete the deflation of the sac. Said swivel bar 22 may be connected with the presser plate at any

70

75

80

85

90

95

110

115

120

125

130

suitable point between O—O, Fig. 13.

It will be obvious to those skilled in the art that various constructions within the scope of this invention, as set out in the claims, may be made to achieve the end in view.

We are aware of the pen of Patent 457,212, which embodies a sac-collapsing device comprising a flexible bar, an element extending longitudinally with the pen barrel and movable longitudinally away from the nib-section for effecting collapse of the sac by bending the said bar, and screw-means operative upon the said element for moving the same.

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 sac self-filling fountain pen of the type hereinbefore defined, characterised in that there is included in the knob end of the body bore a member of inclined or angular configuration which is operably associated with or carries a presser plate and is also connected with a rotary knob, and a bar is situated at the back of or at the nib end of said presser plate and is movably associated therewith, unscrewing of the knob causing said inclined or angular presser plate-carrier to be retracted or projected (according to the construction and arrangement of parts), thereby causing, by the aid of a stop, the engaging extremity of the presser plate to move or slide along its carrier and across the body bore to press against and so proceed to deflate the sac from its closed end, continuation of the unscrewing of the knob bringing said back-bar or the tail bar associated with the presser plate—as the case may be—into operation, and the bar proceeding to carry—through its consequential angular displacement—the other end of the presser plate, i.e. the end nearest the nib, across the body bore to the opposite side, to continue and complete the deflation of the sac, and screwing of said knob back to its normal position causing the movements of the parts to be reversed and a charge of ink thus induced into the sac.

2. An embodiment of the fountain pen claimed in the preceding Claim, in which the actuation of the ink sac is effected through the retraction of said presser plate-carrier located in the knob end of the barrel; the arrangement being such that, in a filling operation, on the unscrewing of the knob, the adjacent end of the presser plate is

caused to slide on an inclined or angled part of its carrier from the short to the long side to deflate the closed end of the sac, and the free end of a back-bar connected in swivel or hinged fashion with the presser plate is drawn into abutment with a shoulder or other appropriate stop situated at the rear end of the body bore, whereupon the sac's deflation is completed through the consequential angular displacement of the back-bar across the bore.

3. An embodiment of the fountain pen claimed in Claim 1, in which the knob is operable in conjunction with a secondary carrier-actuating screw, of faster pitch than that of the knob, and a relatively short tail bar pivotally or hingedly associated with the presser plate at the nib end of the pen and whose free extremity abuts against the nib holder or other appropriate stop, unscrewing of the knob causing the adjacent end of the presser plate to slide up the inclined or angled portion of the carrier from the long to the short side, and thereby to be carried across the bore of the pen body to deflate the closed end of the sac, and completion of the sac's deflation being effected through said abutment of the free extremity of said tail bar against the nib holder or other stop and the consequential angular movement of its—the tail bar's—end which carries the front end of the presser plate across the body bore.

4. A sac self-filling fountain pen as claimed in any one of the preceding Claims, in which the presser plate-carrier is of wire bent to form a trapezium, and including a loop wherethrough extends a screw, or the like, associated with the actuating knob.

5. A sac self-filling fountain pen as claimed in any one of the preceding Claims, wherein the mouth of the sac is associated with a plug provided with a through-passage, and which plug is screwed to the nib holder.

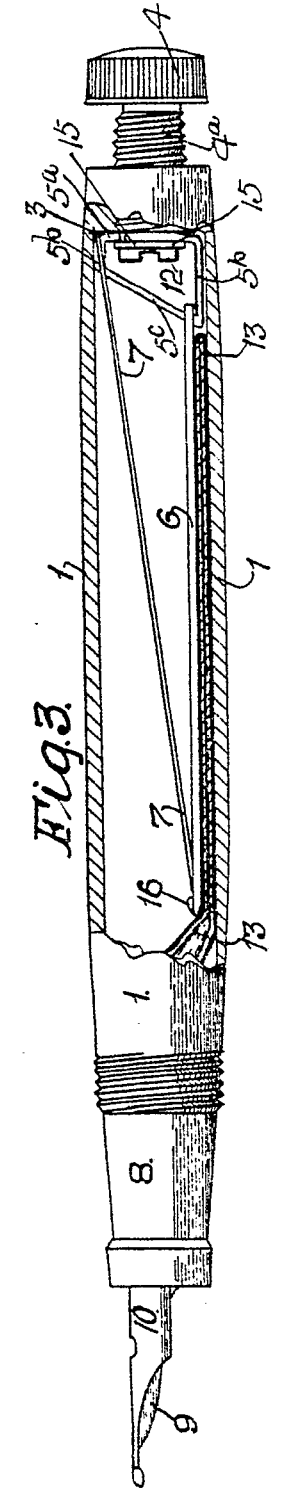
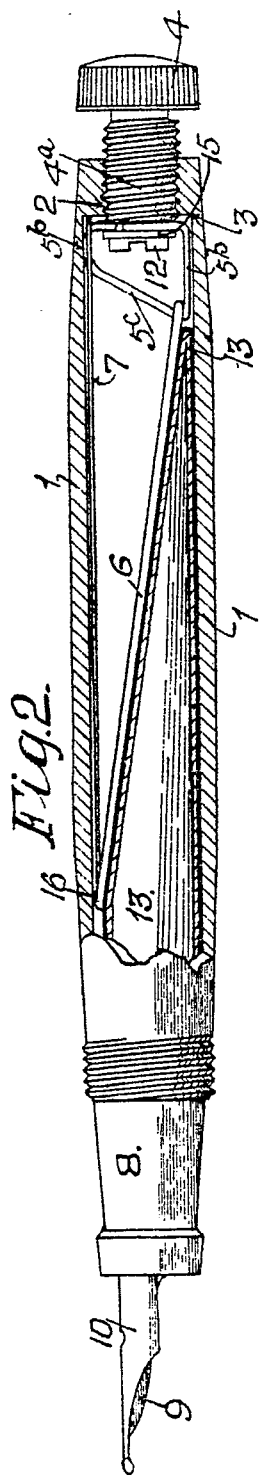
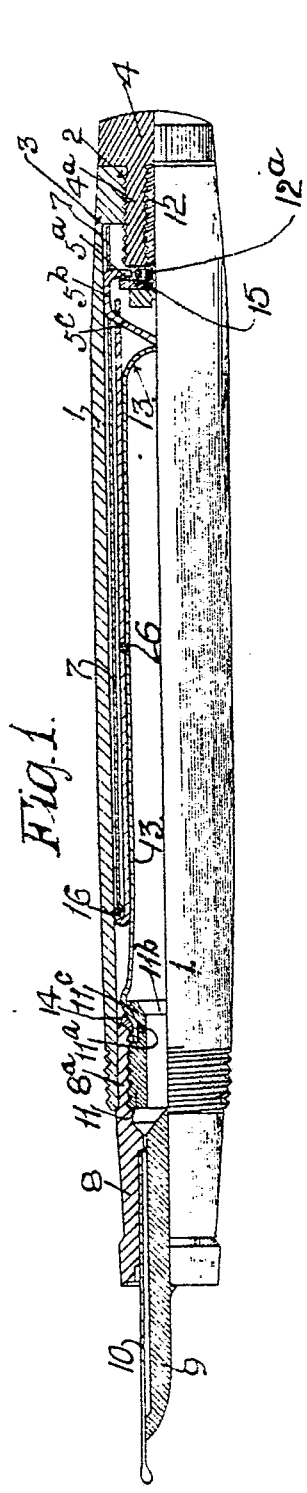
6. A sac self-filling fountain pen substantially as herebefore described and illustrated in Figs. 1 to 9, inclusive, of the accompanying drawings.

7. A sac self-filling fountain pen substantially as herebefore described and illustrated in Figs. 10 to 14, inclusive, of the accompanying drawings.

Dated this 17th day of June, 1947.

JOHN HINDLEY WALKER,
125, High Holborn, London, W.C.1,
and 139, Dale Street, Liverpool, 2.
Chartered Patent Agent.

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



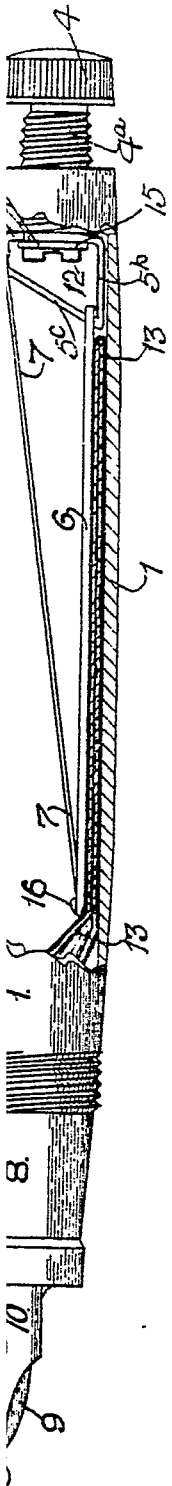


Fig. 4.

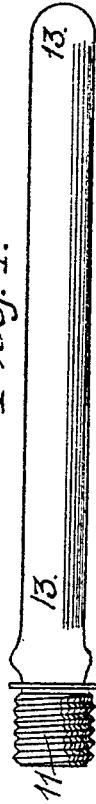


Fig. 5.



Fig. 6.

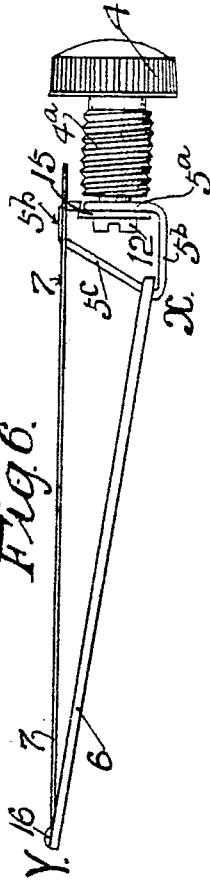


Fig. 7.

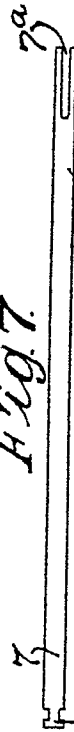


Fig. 8.

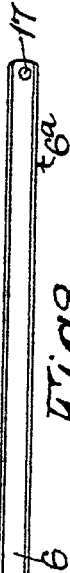
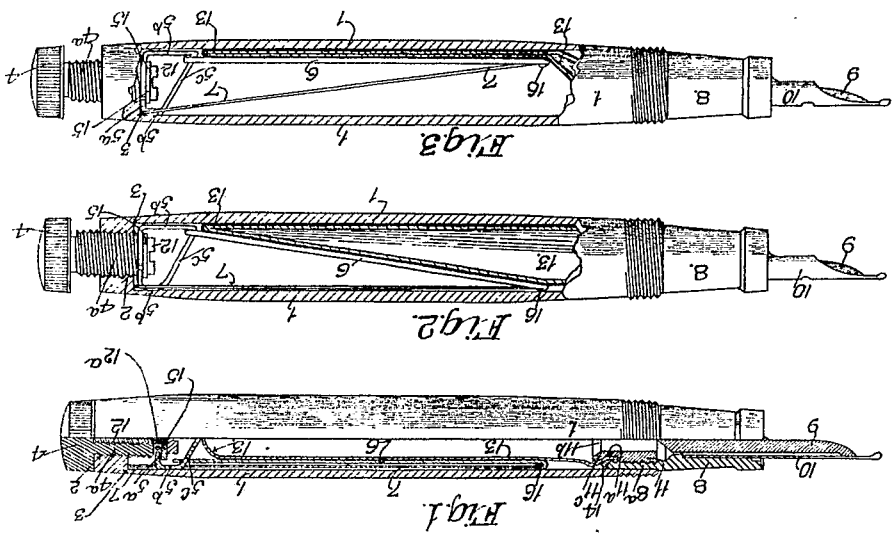
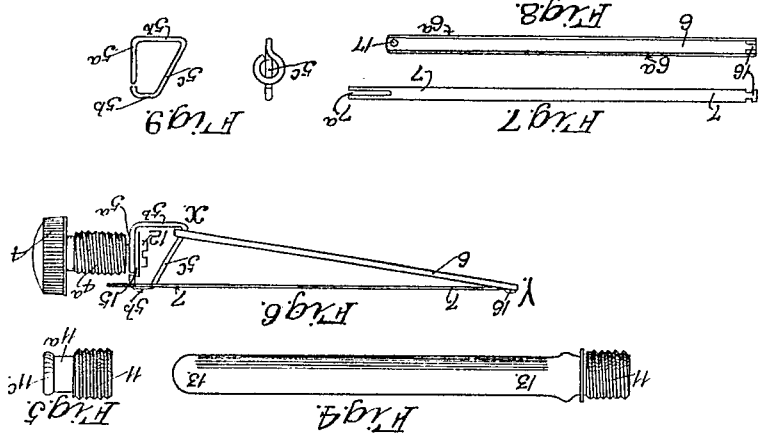


Fig. 9.





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

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

