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*Date of Application, 8th Apr., 1903*

*Complete Specification Left, 4th Jan., 1904—Accepted, 25th Feb., 1904*

PROVISIONAL SPECIFICATION.

# "Improvements in or relating to Fountain Pens".

I, EDUARD REISERT of 129 Frankfurter Strasse Hennef (Sieg) Germany, Engineer, do hereby declare the nature of this invention to be as follows;—

This invention relates to fountain pens for pen holders and especially to that type in which the pen after use is withdrawn into the ink-holder and when it is to be used is protruded therefrom. In such pen-holders, it was formerly necessary after the drawing in of the pen into the ink-holder to close the aperture for the pen by means of a cap inserted or screwed in, which cap during the use of the holder was stuck upon the other end of the pen-holder in order to retain it. This operation involves not only a troublesome manipulation but also is liable to ink the fingers, because obviously ink may remain in the interior of the closing cap and moreover ink easily accumulates on the part surrounding the entrance opening for the pen of the holder end.

In order to simplify the manipulation and to avoid as far as possible the blackening of the fingers I have devised an undetachable closing organ for the aperture for the pen which can be operated in various ways, preferably however by revolving the cap for effecting the opening of the aperture. In this manner the taking off and replacing of a cap is avoided; moreover the fixing of the same on to the opposite end of the pen-holder during the use of the latter, so that it is almost impossible to blacken the fingers with it because it is not ever needful to take hold of the closing organ itself, and further the ink has no opportunity to accumulate in front of the pen opening.

In order to make the holder more handy, there is further the arrangement whereby the protrusion and retractation of the pen is effected by the drawing out or pushing in of the holder end opposite to the pen and this in such a manner that when this holder end is drawn out the pen comes forth from the holder, whilst when it is pushed in the pen is again drawn back into the holder. By this means I attain the result that the pen-holder has the length necessary for convenient holding in the hand when it has the writing position. Whereas when it is not in use it is very considerably shortened and therefore can be more easily carried in the pocket. These two improvements, namely, the arrangement of an undetachable closing organ for the orifice of the pen, and that of the arrangement for projecting the pen by means of moving in the opposite direction the other end of the pen-holder, can be used both separately or in combination.

In order to make the invention clearer, reference is made to the accompanying drawing. In the drawing, there is shewn on an enlarged scale in

Figure 1 a longitudinal section through a pen-holder with the improved closing organ.

Figure 2 a section on the line A—B, of Figure 1, with the closing organ in the closed position.

Figure 3 the same section with the closing organ in the open position.

Figure 4 a longitudinal section through a fountain pen-holder with the new arrangement for moving the pen.

Figure 5 a section through the usual closing cap employed with the pen-holder according to Fig. 4.

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Figure 6 a longitudinal section through a fountain pen-holder with the improved closing organ and the new device for displacing the pen.

Referring first to Figures 1 to 3, the following is to be noticed.

A tube *a* serves as the ink holder, in which tube there is placed at its lower end the rod *b* bearing the pen *c*. The upper end of the rod *b* engages in a sleeve *d* having cut-out threading *e*. A bar *f* fastened to the rod *b* engages through the cut-out threading *e* in a longitudinal groove *g* of the tube *a*. The spindle *h* directed upwards attached to the sleeve *d* leads through the stopper *q* firmly connected with the tube *a*, in which it is water-tight to the outside and bears at its free end the knob *i*. If this knob *i* be revoluble, then the rod *b* will move according to the direction of revolution either downwards or upwards so that the pen *c* emerges from the holder or is withdrawn within the same. This general arrangement is already well known, but what follows is new.

The lower aperture of the tube *a* is rather more than half closed by means of the partition *k*, so that for the passage of the pen there only remains the opening *l*. Over the tube *a* is placed a second tube *m*, the lower opening of which is also more than half closed by means of the partition *n*, so that there remains open only the aperture *o*. At the upper end of the aperture a spring *p* which is supported upon the stop *q* attached to the tube *a* presses the outer tube *m* constantly upwards, whereby the lower ends of the tubes *a* and *m* are pressed together and caused to close efficiently. If the outer tube *m* be held fast with one hand and with the other hand the ring *r*, which is firmly connected to the inner tube *a* through the bolt *x* with stop *q*, be turned to the right or the left, then the two tubes *a* and *m* may be so adjusted with regard, to one another that their two walls *k* and *n* either lie one over the other as shewn in Figure 3 or opposite to one another as shewn in Figures 1 and 2. In the first case the aperture *l* for the pen is left free, in the latter case, however, the aperture is closed by means of the partition *n*. In this manner, without the aid of detachable caps, stoppers or the like, the ink-holder can be opened when the pen is to be protruded, by turning the knob *i*, and likewise when the pen has been withdrawn the ink holder can be again closed. It should also be remarked that the arrangement is such that *i* turns more easily than *r*, so that *r* is not turned by friction when *i* is revolved.

Referring now to Figures 4 and 5, about at the middle of the ink-holder, there is placed a little tooth wheel 2, revoluble upon a fixed axle 1, in which on the right and left hand, the racks 3 and 4 respectively engage. The rack 3 has on its outer end the pen 5, and the rack 4 has a bar 6, which passes to the outside through the stopper 7 provided with an air-tight closing device. The outer end of the bar 6 is rigidly connected to a tube 8 closed at one end, consequently somewhat in the shape of a bell, which tube engages over the cover of the pen-holder and in thismanner causes a to and fro motion of the rod 6, when the cover is moved. If the bell-shaped tube 8 is pushed inwards, then by the aid of the tooth wheel 2, the motion of the rack 4 thus caused is transmitted in the opposite direction to the rack 3 and consequently to the pen 5. The pen is therefore withdrawn into the interior of the holder.

On the other hand, when the tube 8 is pulled out, the pen 5 is also protruded. By means of a screw cap 9 (Figure 5) or any other convenient manner, the ink holder can be closed when out of use. Whilst the writing is proceeding, this cap 9 can be placed upon the closed end of the tube 8.

In Figure 6, which shews the fountain pen with the new closing organ and a new apparatus for moving the pen, there is moreover the following to be noticed.

This modification will be understood from what has gone before and the illustration on the drawing without further explanation. The holder is so handled that for the purpose of drawing back the pen into the ink holder, the ring 10 must be held fast and at the same time the sleeve 11 pushed in by means of the other hand, so that the pen moves back into the ink holder; whereupon

by turning the sleeve 11 whilst the ring 10 is held fast with the other hand, the closing of the opening for the pen is also effected.

When the mechanism is to be used, the opposite action takes place, that is to say whilst the ring 10 is held fast with one hand, the cover 11 is revolved with the other, so that the aperture is opened, and by drawing out the sleeve 11, the protrusion of the pen is effected. In this construction therefore, the outer cover 12 is stationary at the opening or the closing of the pen aperture, and the inner sleeve 13 is caused to turn, for which latter purpose the sleeve 11 is caused by means of the pin 14 moving in the slot 15 to take with it the upper part of the holder and consequently also the inner sleeve 13 rigidly connected therewith.

Dated the 7th day of April, 1903.

W. P. THOMPSON & Co.,
Patent Agents for the Applicant.

## COMPLETE SPECIFICATION.

### Improvements in or relating to Fountain Pens.

I, EDUARD REISERT, of 129, Frankfurterstrasse, Hennef /Sieg/, Germany, Engineer, 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 pens for pen holders and especially to that type in which the pen after use is withdrawn into the ink-holder and when it is to be used is protruded therefrom. In such pen-holders, it was formerly necessary after the drawing in of the pen into the ink-holder to close the aperture for the pen by means of a cap inserted or screwed in, which cap during the use of the holder was stuck upon the other end of the pen-holder in order to retain it. This operation involves not only a troublesome manipulation but also is liable to ink the fingers, because obviously ink may remain in the interior of the closing cap and moreover ink easily accumulates on the part surrounding the entrance opening for the pen of the holder end.

In order to simplify the manipulation and to avoid as far as possible the blackening of the fingers I have devised an undetachable closing organ for the aperture for the pen. This undetachable closing organ consists in a slide which can be operated in various ways; but I prefer to open and to close the aperture for the pen by revolving the slide.

In order to make the invention clearer, reference is made to the accompanying drawing. In the drawing there is shewn on an enlarged scale in

Figure 1 a longitudinal section through a pen-holder with the improved closing organ and mechanism;

Figure 2 an elevation of the holder, the hollow knob *i* forming the upper end of the holder being taken away;

Figure 3 a view of the said hollow knob *i* from below;

Figure 4 a section on the line A—B, Figure 1, with the slide in the closed position;

Figure 5 the same section with the slide in the open position;

Figure 6 a longitudinal section through the under part of the pen holder, the slide having a position corresponding to that shown in Figure 5.

A tube *a* serves as the ink-holder, in which tube there is placed at its lower end the rod *b* bearing a stopper $c^1$ and the pen *c*. The upper end of the rod *b*

engages in a sleeve *d* having cut-out threading *e*. A pin *f* fastened to the rod *b* engages through the cut-out threading *e* and in a longitudinal groove *g* of the tube *a*. The spindle *h* directed upwards attached to the sleeve *d* leads through the stopper *q* firmly connected with the tube *a* and bears at its free end the hollow knob *i*. If this knob *i* is revoluble, then the rod *b* will move according to the direction of revolution either downwards or upwards so that the pen *c* emmerges from the holder or is withdrawn within the same. This general arrangement is already well known but what follows is new:

The lower aperture of the tube *a* is rather more than half closed by means of the segment *k*, so that for the passage of the pen there only remains the opening *l*. Over the tube *a* is placed a second tube *m*, the lower opening of which is also more than half closed by means of a segment *n*, so that there remains open only the aperture *o*. The said segments *k* and *n* work as rotary slides. A spring *p*, which is supported upon the stop *q*, presses the hollow cylinder *y* upwards which is screwed into the tube *m* so that the lower ends of the tubes *a* and *m*, *i.e.* the segments *k* and *n*, are pressed together and caused to close efficiently. The stopper *q* has a prolongation *r* reaching through the hollow cylinder *y* and bearing a pin *w* at its upper end, which pin *w* engages in a recess *v* of the hollow knob *i* /Figures 1 and 3/. If the outer tube *m* be held fast with one hand and with the other hand the knob *i* be turned to the right or to the left, then the two tubes *a* and *m* may be so adjusted with regard to one another that the segments *k* and *n* lie one over the other as shewn in Figures 5 and 6 or opposite to one another as shewn in Figures 1 and 4. In the first case the aperture *l* for the pen is left free, in the latter case, however, the aperture is closed.

Since, as mentioned above, by the revolution of the knob *i* also the motion of the pen *c* shall be caused, which motion requires a greater degree of revolution than that of the segments *k* and *n*, means must be provided for preventing the tube *a* from being turned as soon as the aperture *l* is opened.

For this purpose, there is arranged a groove *u* at the upper end of the spindle *h* and to the hollow knob *i* there is fixed a pin *t*, which engages in the said groove *u*. By this means, the knob *i* can be pulled out without interrupting the connection with the spindle *h*, while the pin *w* leaves the recess *v* and, thus, the tube *a* is prevented from turning when the revolution of the knob *i* will be continued.

In order exactly to control the degree of turning necessary for opening the aperture *l* and for pushing out the pen *c* and in order to prevent the pin *w* from reentering the recess *v* before such reentering be intended, the following arrangement is provided. The hollow cylinder *y* has cut-out threading *s* in which a pin *j* fixed to the knob *i* engages. The under part of the threading *s*, having the extension of a semicircle, is precisely horizontal, the following part from *x* to *z* is vertical and the remaining part is spiral-shaped.

The operation is as follows:

If the knob *i* is turned on an angle of 180°, the pin *j* will have reached *x* and the aperture *l* will then be opened. The pen *c*, however, has not yet commenced to move since the spindle *h* and the stopper *q* with the tube *a* and, consequently the threading *e* and the pin *f*, have been turned together without changing their respective positions. It is impossible to continue the revolution of the knob *i* before the latter is pulled out and the pin *j* is raised from *x* to *z*. The pin *w* has, then, left the recess *v* thus interrupting the connection between the knob *i* and the tube *a*. If, now, the knob is turned again, the pen *c* will be protruded while the segments *k* and *n* remain in their positions. The pin *j* moves upwards in the spiral-shaped part of the threading *s*, thereby increasing the distance between the knob *i* and the pin *w* so that the latter cannot reenter into the recess *v*. As soon as the pin *j* has reached the upper end of the threading *s*, the pen has the position ready for use, and further turning is impossible.

It will be seen that the withdrawing of the pen *c* and the closing of the aperture *l* will be done in the reverse way. When the openings *o* and *l* are in alignment, the outcoming of the ink is prevented by the stopper $c^1$.

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-pen having a slide adapted to open and to close the aperture of the inkholder serving as passage for the pen, as and for the purpose set forth.

2./ A fountain-pen having a rotary slide adapted to open and to close the aperture of the inkholder serving as passage for the pen, as and for the purpose set forth.

3./ In a fountain-pen, the combination with the inkholder, the pen and means for protruding the pen and for withdrawing the same, of rotary slides for closing and opening the aperture of the inkholder serving as passage for the pen, and of means for revolving the said rotary slide, as and for the purpose set forth.

4./ In a fountain-pen, the combination with an inner tube *a* serving as inkholder and having a segment *k* at its lower end leaving an aperture *l*, the pen *c* and means for protruding the pen and for withdrawing the same through the aperture *l*, respectively, of an outer tube *m* having at its lower end a segment *n* leaving an aperture *k* and means for turning the said tubes *a* and *m* with regard to one another as and for the purpose set forth.

5./ In a fountain-pen, in combination, an inkholder *a*, having an aperture *l*, a rotary slide *k n* for opening or closing the said aperture *l*, a knob *i*, connections between the knob *i* and the rotary slide, a rod *b* bearing the pen *c*, connections between the rod *b* and the knob *i* for moving the rod *b* to and fro on turning the knob *i*, and means for interrupting the connection between the knob *i* and the rotary slide, as and for the purpose set forth.

Dated this Fourth day of January 1904.

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REISERT'S PROVISIONAL SPECIFICATION.

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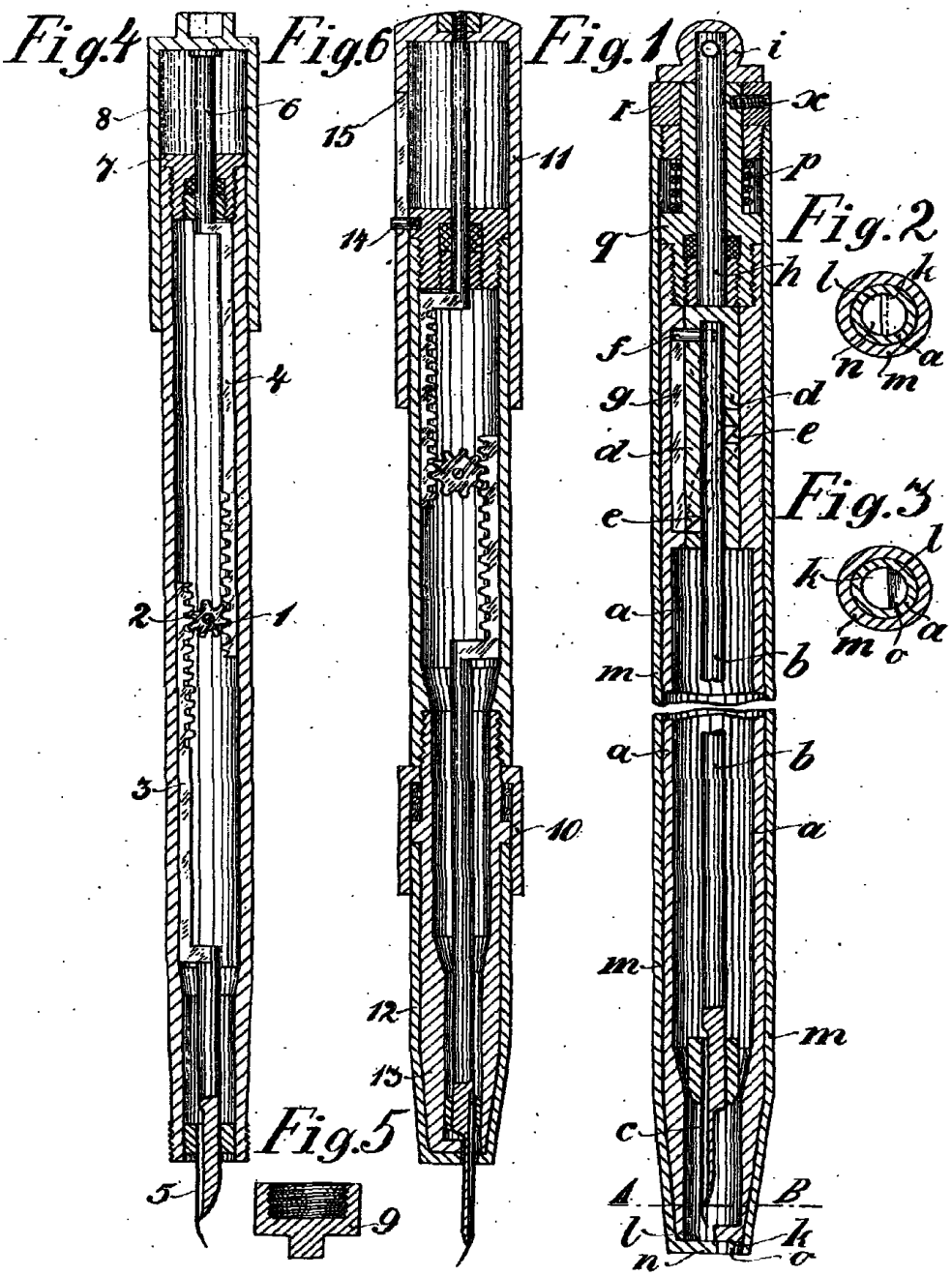


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A.D. 1903. April 8. N° 8198.
REISERT'S Complete Specification.

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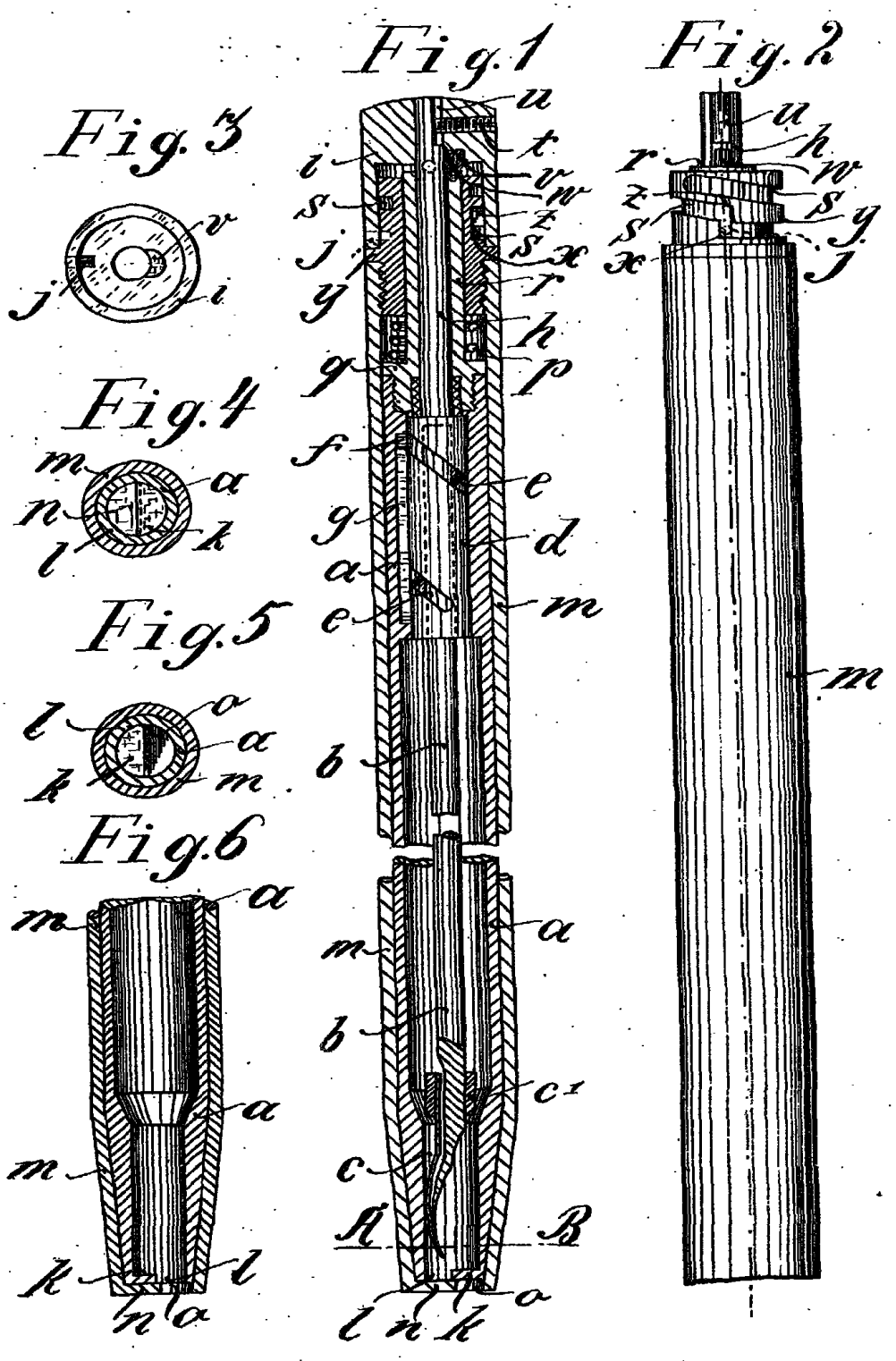


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