N° 5790 A.D. 1915

(*Under International Convention.*)

Date claimed for Patent under Patents and Designs Act, 1907, being date of first Foreign Application (in the United States), 17th Aug., 1914

Date of Application (in the United Kingdom), 17th Apr., 1915

At the expiration of twelve months from the date of the first Foreign Application, the provision of Section 91 (3) (a) of the Patents and Designs Act, 1907, as to inspection of Specification, became operative

Accepted, 18th Nov., 1915

COMPLETE SPECIFICATION.

Improvements in Self-filling Fountain Pens.

We, WILLIAM IRVING FERRIS, of 525, Lawrence Avenue, Westfield, in the County of Union and State of New Jersey, United States of America, Manufacturer of Fountain Pens, and EDWIN FRANKLIN BRITTEN, Junior, of 21, Van Reipen Avenue, Jersey City, in the County of Hudson and State of New Jersey, aforesaid, Manufacturer of Fountain Pens, 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 self-filling fountain pens of the kind having an elastic ink reservoir arranged within the barrel or body of the pen and adapted to be compressed by a presser bar actuated by a lever pivoted to said barrel in a slot therein in order that ink may be drawn into said reservoir when the pressure thereon is released.

The invention has for its general objects to improve and simplify the mounting for the presser bar actuating lever whereby boring of the barrel of the pen for the reception of the fulcrum pin for the lever is avoided, the lever being fulcrumed in a box-like frame which is set into the lever-receiving slot of the pen barrel.

A further object of the invention is the provision of a novel form of box or frame that constitutes the mounting for the lever, such frame being made of a blank punched from sheet metal and formed with lugs whereby the box or frame is retained in position in the lever slot of the pen barrel.

Still another object of the invention is to provide a presser bar actuating lever which has one end so shaped that when the presser bar is depressed the lever will occupy a dead centre position perpendicularly to the presser bar, and whereby the presser bar when in normal position will act on the lever to hold the same within the box or frame and flush with the outer surface of the barrel of the pen.

A further object of the invention is the provision of catch means on the lever which is adapted to lock the same yieldingly in normal position, so that the

lever cannot accidentally be operated in the ordinary use of the pen and force ink out of the sack.

Another object is to provide a stop means for limiting the throw of the lever in a direction to depress the presser bar.

The invention has as a further object the employment of a novel connecting means between the lever and presser bar whereby the restoring of the lever to normal position will positively raise the presser bar and thus co-operate with the spring of the presser bar to restore the latter to normal position.

With such objects in view, and others which will appear as the description proceeds, the invention comprises various novel features of construction and arrangement of parts which will be set forth with particularity in the following description and claims appended hereto.

In the accompanying drawings, which illustrate certain embodiments of the invention, and wherein similar characters of reference indicate corresponding parts in all the views,

Figure 1 is a plan view of a fountain pen equipped with the invention;

Figure 2 is an enlarged longitudinal section through a portion of the barrel of the fountain pen with the presser bar and its actuating lever in normal position;

Figure 3 is a similar view showing the presser bar depressed by the lever;

Figures 4 and 5 are sectional views respectively on lines 4—4 and 5—5, Figure 2;

Figure 6 is a perspective view of the lever and its mounting;

Figure 7 is a plan view of the blank from which is made the frame or box in which the lever is mounted;

Figure 8 is a modification showing the lever connected with the presser bar and occupying a position corresponding to the compressing of the ink sack.

Figure 9 is a longitudinal section of the modification, showing the lever and presser bar in normal position; and

Figure 10 is a detail sectional view showing a modified form of catch means for holding the lever yieldingly locked in normal position.

Referring to the drawing, A designates the barrel of a fountain pen in which is contained an ink sack B that is deflated by the usual presser bar 1. The presser bar is actuated by a lever 2 pivotally mounted in the barrel and is disposed within a slot 3, the lever being normally flush with the outer surface of the pen barrel, as clearly shown in Figure 2. The presser bar is provided with a spring 4 which raises it when the lever is returned to normal position, so that the sack can expand and draw in a charge of ink.

The operating lever 2 is mounted within a frame C that is of such size as to fit in the slot 3 of the barrel. The frame or box is made from a blank of the form shown in Figure 7, and comprises bar-like sides 5 and 6 connected by an end wall 7, and on the bar 5 is the opposite end wall 8, there being on the outer end of the side wall 6 a lug 9 which is bent against the outer surface of the end wall 8. The blank when bent up forms a rectangular box, and on the end walls thereof are lugs 10, 10^a and 11, 11^a respectively. These two pairs of lugs serve as means for retaining the box or lever mounting in place, the lugs 10 and 11 being at the outside of the barrel of the pen and the lugs 10^a and 11^a at the inside. In putting in the box or frame C the internal lugs may stand more or less perpendicular to the length of the box, so as to be let into the slot 3 from the outside, and then by a suitable instrument inserted into the empty barrel of the pen, the lugs 10^a and 11^a can be bent back. It will be understood that before the box C is applied to the barrel, the lever 2 is mounted in the box by means of a pivot pin 12 which passes through the side members of the box and through the lever nearer one end thereof than the other. On the bar or side 5 of the box is an inwardly-extending lug 13^a adjacent to the fulcrum of the lever, so as to form a stop to limit the throw of the latter in a direction to depress the bar, as clearly shown in Figure 3.

The lever, which is preferably made from a sheet metal blank, has a flat end 13 disposed at right-angles to the length of the lever so that when the presser bar is depressed by the lever, as shown in Figure 3, the said flat surface 13 will bear against the presser bar and hold the latter depressed, the lever when in this position being on a dead centre. The sack being in this manner deflated, it merely remains to place the pen point of the fountain pen in a bottle of ink and throw the lever out of its dead centre position in order to allow the presser bar to be raised by the spring 4, and the sack to expand so as to draw in a charge of ink. The presser bar engaging end of the lever has a projection 14 formed on its under side so that when the presser bar is in fully raised position it will engage this projection and thereby serve to hold the lever fully retracted in the box C, where it will be flush with the outer surface of the pen barrel. Instead, however, of relying on the presser bar to retain the lever in normal position, catch means are provided. According to one form the catch means comprises small projections 15 on the inner surfaces of the sides 5 and 6 of the box, which are adapted to enter depressions 16 in the sides of the lever 2, adjacent to the operating end of the lever. By means of this the lever, after being thrown back from the position shown in Figure 3, will be required to be pressed home into the box C, whereby the projections snap into the depressions 16. If desired, the lever may have yielding members 17, as shown in Figure 10, which engage abutments 18 that may be formed by the sides of the slot in which the lever is mounted, or the box therefor. Obviously, other means may be devised to provide a catch to hold the lever yieldingly locked in normal position.

It may be desirable to utilize the lever 2 to raise the presser bar, and for this purpose the latter may be provided with a loop 19, as shown in Figures 8 and 9, and on the lever is a pin 20 which slidably engages in the loop to thereby form a sliding hinge connection between the lever and presser bar. The lever will depress the presser bar in the manner hereinbefore described, but when the lever is restored to normal position the pin 20 by engaging the loop will raise the presser bar.

From the foregoing description taken in connection with the accompanying drawings, the advantages of the construction and method of operation will be readily understood by those skilled in the art to which the invention appertains, and while we have described the principle of operation, together with the device which we now consider to be the best embodiment thereof, we desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired as are within the scope of the appended claims.

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 kind hereinbefore set forth, wherein the lever is fulcrumed in a box fitted in the slot in the barrel.

2. A fountain pen as claimed in Claim 1, wherein the box is provided with lugs on the ends thereof engaging the barrel for retaining the box in the slot, substantially as set forth.

3. A fountain pen as claimed in Claim 2, wherein the box is provided with a pair of lugs on the ends thereof for internally and externally engaging the barrel at the ends of the slot therein, substantially as set forth.

4. A fountain pen as claimed in Claim 3, wherein the box is provided with a stop for limiting the movement of the lever in a direction to deflate the sack.

5. A fountain pen as claimed in Claim 4, having inter-engaging catch means on the box and lever for yieldingly holding the latter in normal position, substantially as set forth.

6. A fountain pen including a barrel having a slot, a lever fulcrumed therein, an ink-containing sack in the barrel, a presser bar for the sack, and a stop in

the slot for limiting the movement of the lever in a direction to operate the presser bar, the bar-engaging end of the lever being flat to bear against the bar, whereby the lever is retained in dead centre position when the bar is fully depressed.

7. In a fountain pen, a barrel having a slot, an ink-containing sack, a presser bar, an operating lever therefor, means for hingedly and slidably connecting one end of the lever with the bar, and a frame in which the lever is fulcrumed and forming the sole means for attaching the lever to the barrel and holding the latter in the slot, said frame having a chamber in which the lever is normally longitudinally disposed with the outer surface of the lever flush with the outer surface of the frame.

Dated this 17th day of April, 1915.

A. M. & WM. CLARK,
Chartered Patent Agents,
53 & 54, Chancery Lane, London, W.C.

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1915.

Fig. 1.

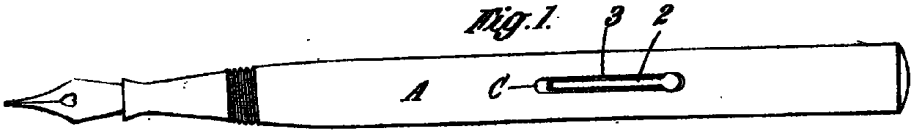

Fig. 2.

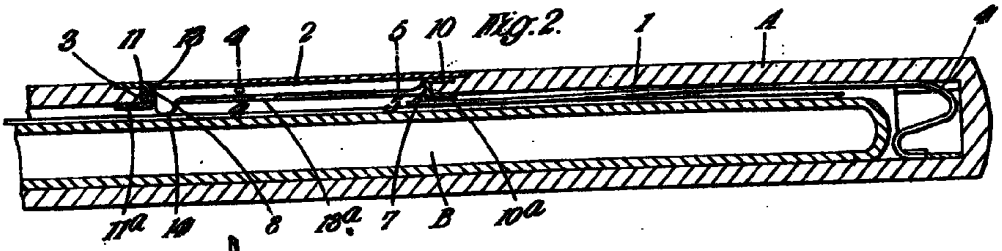

Fig. 3.

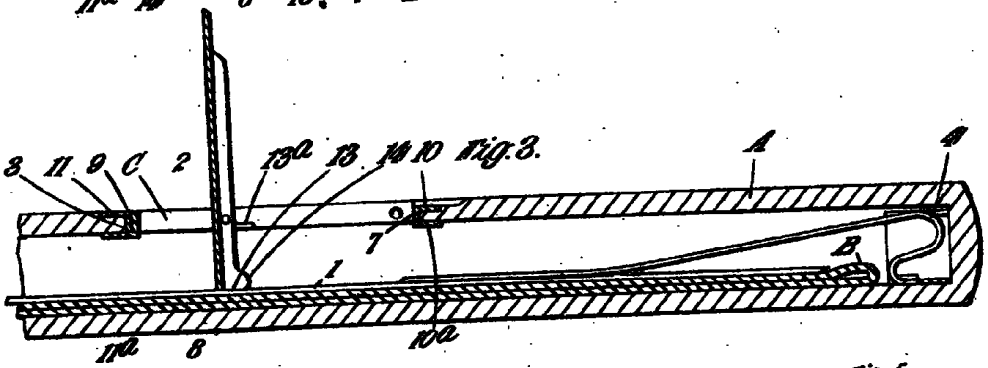

Fig. 4.

Fig. 5.

Fig. 6.

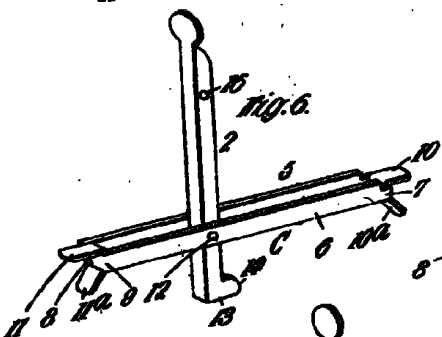

Fig. 7.

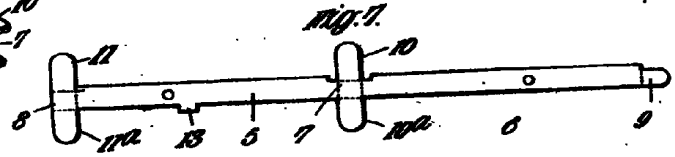

Fig. 8.

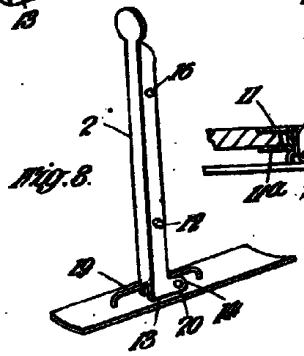

Fig. 9.

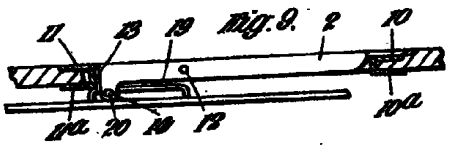

Fig. 10.

Malby & Sons, Photo-Litho.