May 15, 1928. 1,669,714

D. J. LA FRANCE

FOUNTAIN PEN

Filed Nov. 8, 1926

Fig. 1.

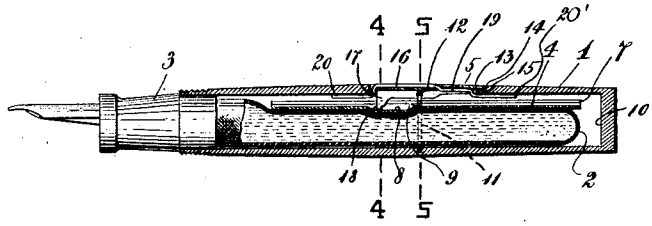


Fig. 2.

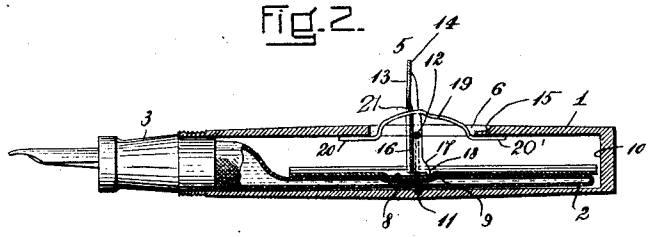


Fig. 3.

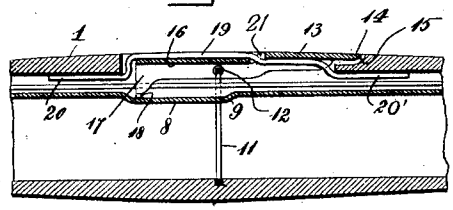


Fig. 4.

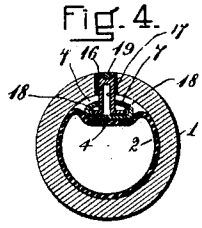


Fig. 5.

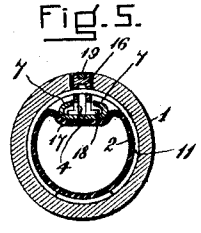
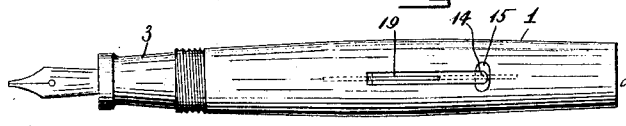


Fig. 6.



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UNITED STATES PATENT OFFICE.

DAVID J. LA FRANCE, OF SOMERVILLE, MASSACHUSETTS, ASSIGNOR TO THE CARTER'S INK COMPANY, OF CAMBRIDGE, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

FOUNTAIN PEN.

Application filed November 8, 1926. Serial No. 146,873.

The invention relates to an improvement in fountain pens employing elastic reservoirs or sacks which are filled with ink first by compressing the reservoir and then allowing it to expand for drawing in the ink by suction created by the resilience of the reservoir in assuming its expanded shape, a presser bar and lever being employed for compressing the lever.

The object of the invention is to provide an improved means for returning the lever to a closed position when open without the aid of the elastic reservoir and for maintaining the lever in a closed position without the aid of the reservoir, the special object being to provide a simple means involving comparatively slight expense, at the same time producing an efficient and reliable lever control.

The invention can best be seen and understood by reference to the drawings in which—

Figure 1 shows a sectional view of the fountain pen embodying the invention with the lever closed.

Fig. 2 shows the same section as Fig. 1 but with the lever open.

Fig. 3 shows an enlarged section of the middle portion shown in Fig. 1.

Fig. 4 shows a section on the line 4—4 of Fig. 1, and

Fig. 5 shows a section on the line 5—5 of Fig. 1 looking toward the left.

Fig. 6 is a plan of the fountain pen.

Referring to the drawings:—

1 represents the casing. 2 is the ink reservoir or sack contained within the casing and carried in the usual manner by the penholder 3 which fits onto the end of the casing. 4 is the presser bar arranged within the casing above the reservoir and independent thereof, and 5 is a lever arranged to turn within a slot 6 in the casing for depressing the presser bar and contracting the reservoir.

The presser bar 4 is of a type commonly employed, its opposite longitudinal sides being turned upwardly and inwardly to provide spaced catching edges 7 with which the lever 5 has engagement as will presently be described. The presser bar along its centre is preferably provided with a slightly depressed portion 8 with a shoulder 9 at the end of such depression. The presser bar is preferably of a length to cover the sack and may if desired bear at its rear end against the interior of the end 10 of the casing.

The lever 5 is preferably of stamped sheet metal having the general form of a small channel bar. The lever is pivotally mounted to turn within the slot 6 in the casing by means of a wire 11 passed through small holes 12 in the sides of the lever and which wire is contained within an annular slot formed in the interior of the casing, such kind of pivotal support for a lever being one commonly employed in the art. More specifically the lever comprises a force arm 13 the end 14 of which slightly overlaps the casing beyond the end of the slot in it and the casing at this point is preferably provided with an incision or cut-out 15 by which access is had to the end 14 of the lever for turning it. 16 represents the resistance or pressure arm of the lever which is the arm which operates, as the force arm of the lever is raised, to depress the presser bar for contracting the reservoir or sack. The arm 16 is provided on its outer side with an end portion 17 adapted to enter the presser bar between the catching edges 7 thereof with prongs 18 extending outwardly beneath said edges, the arrangement being such that the end of the pressure arm of the lever will have a loose but constant engagement with the presser bar especially so that it will operate to lift the presser bar after its depression by the lever.

With special reference now to the means provided for holding the lever in a normal closed position and for restoring it to a closed position without dependence being placed upon the elasticity residing in the reservoir. The means comprises a wire spring 19 tensioned against the casing and passing through the force arm of the lever to the right of its pivotal point or fulcrum as the lever appears in the drawing. 20, 20′ represent the ends of this wire which are simply caught under the wall of the casing adjacent the ends of the slot 6 in the casing. The wire passes beneath the force arm 13 of the lever and through the opening 21 in it, thence over the fulcrum and pressure arm

16 of the lever beyond the opening 21 in it with the opposite ends of the wire tensioned against the casing as aforesaid.

With the wire thus arranged it will operate on account of its tension to exert force on the force arm of the lever for maintaining the lever in its downturned position as shown in Fig. 1. In this connection it will be observed that the wire, even when the lever is in its normal downturned position, is under some tension for a substantially straight piece of elastic wire is used for the present purpose excepting at points adjacent its ends 20, 20', to permit of the extension of these ends beneath the casing from out of the slot in it as previously described. The wire spring is not of sufficient tension to prevent the lever being freely turned for the purpose of depressing its resistance or pressure arm for depressing the presser bar and contracting the reservoir. When this occurs on account of lifting the force arm of the lever the spring wire will become further distorted until the lever has been turned to a full open or upright position as shown in Fig. 2 when by reason of its turning it has effected a full contraction of the reservoir on account of the depression of the presser bar. When the lever has been turned to this position the normal resistance residing in the reservoir to its contraction, on account of the elasticity of the reservoir, tends to hold the lever in an upright position. As the lever is turned to an upright open position for depressing the presser bar and contracting the reservoir the end 17 of its resistance or pressure arm 16 will draw along the depressed portion 8 in the presser bar until said end encounters the shoulder 9 of the presser bar which defines the proper upright open position of the lever. In case the end of the lever should slip by this edge the lever cannot turn in a counterclockwise direction much beyond its open position owing to the fact that the prongs 18 on the end of its pressure arm will draw against the edges 7 of the presser bar preventing further turning of the lever. After the contraction of the reservoir its expansion is permitted simply by turning the lever in a clockwise direction when the tension of the spring 19 will operate to restore the lever 2 into its normal closed position and maintain it in such position independently of the reservoir, all within the purposes of the invention first referred to.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States:—

1. A fountain pen including in combination a casing having a longitudinal slot therein, a compressible and self-expanding ink reservoir within the casing, a presser bar, a lever arranged within the slot in the casing, means for pivotally supporting said lever whereby it may be turned to engage said presser bar depressing the same and contracting said reservoir, said lever having an opening through it in its power arm beyond its fulcum, and a spring tensioned against said casing and passed through the opening in the lever.

2. A fountain pen including in combination a casing having a longitudinal slot therein, a compressible and self-expanding ink reservoir within the casing, a presser bar, a lever arranged within the slot in the casing, means for pivotally supporting the lever whereby it may be turned to engage said presser bar depressing the same and contracting said reservoir, said lever having an opening through it in its power arm beyond its fulcrum, and a spring tensioned at its opposite ends against said casing and passing beneath the force arm of the lever through the opening in it and over the fulcrum and pressure arm of the lever beyond said opening.

3. A fountain pen including in combination a casing having a longitudinal slot therein, a compressible and self-expanding ink reservoir within the casing, a presser bar, a lever arranged within the slot in the casing, means for pivotally supporting the lever whereby it may be turned to engage said presser bar depressing the same and contracting said reservoir, said lever having an opening through it in its power arm beyond its fulcrum, and a spring tensioned at its opposite ends against said casing and passing beneath the force arm of the lever through the opening in it and over the fulcrum and pressure arm of the lever beyond said opening, that portion of the lever over which the spring passes being grooved to received the spring.

DAVID J. LA FRANCE.