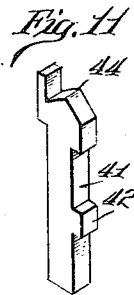
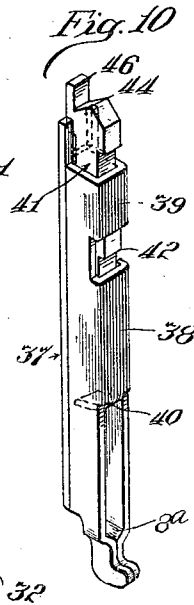
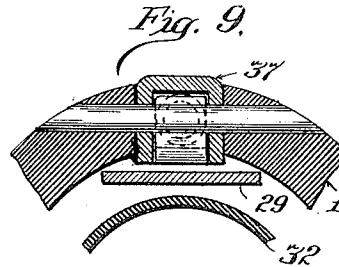
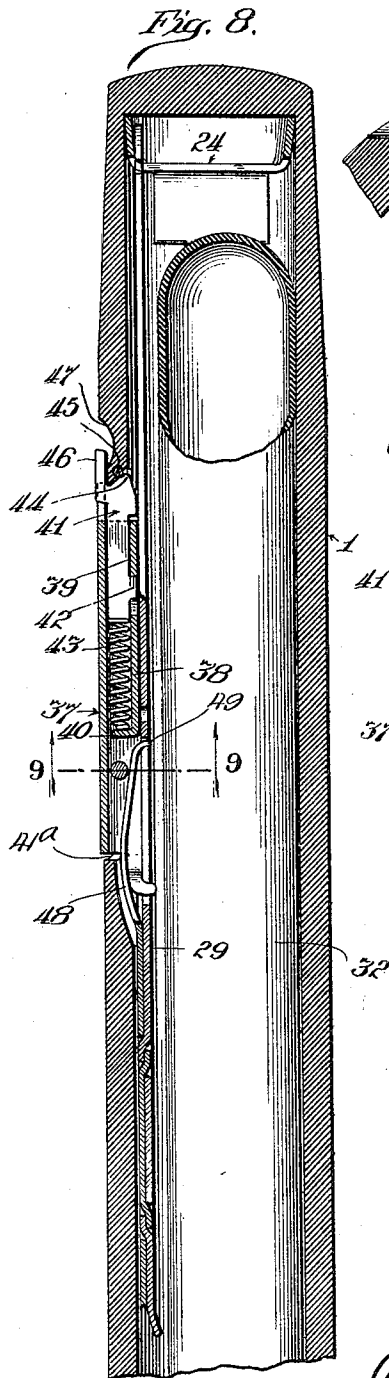
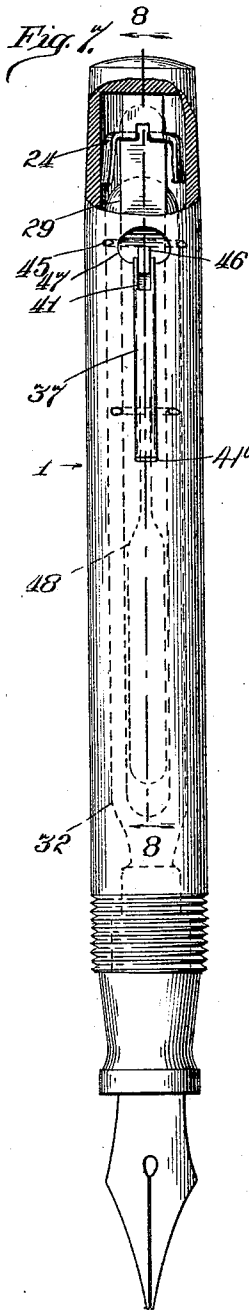


R. W. LOTZ,
FOUNTAIN PEN.
APPLICATION FILED FEB. 11, 1920.

1,407,552.

Patented Feb. 21, 1922.
2 SHEETS—SHEET 2.



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FOUNTAIN PEN.

1,407,552.

Specification of Letters Patent. Patented Feb. 21, 1922.

Application filed February 11, 1920. Serial No. 357,870.

To all whom it may concern:

Be it known that I, RUDOLPH WM. LOTZ, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Fountain Pens; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to self-filling fountain pens and more particularly to certain improvements in fountain pens of the particular type described and claimed in Letters Patent Nos. 1,263,261 and 1,263,260, granted to me April 16, 1918.

The main object of the present invention is to provide a fountain pen of the character described wherein the mechanism for effecting collapse of the ink sack is so associated with the pen barrel as to prevent longitudinal or lateral tilting movement of the pressure bar upon operating the lever to effect collapse of the sack.

A further object of the invention is to provide means for positively effecting primary opening movement of the lever upon releasing the latch thereof.

The invention consists in the features of construction and combinations of parts hereinafter fully described and particularly claimed.

Suitable embodiments of the invention are illustrated in the accompanying drawings in which:

Figure —1— is a view in elevation partly in section of a fountain pen constructed in accordance with the invention.

Figure —2— is a fragmentary central longitudinal section on an enlarged scale on the line 2—2 of Figure —1—.

Figure —3— is a fragmentary detail transverse section on an enlarged scale on the line 3—3 of Figure —2—.

Figure —4— is a detail perspective view of the lever employed.

Figure —5— is a detail perspective view of a latch employed for locking the lever in its closed position.

Figure —6— is a detail perspective view of a guide for the pressure bar.

Figure —7— is a view similar to Figure —1— showing a modified form of construction.

Figure —8— is a fragmentary detail central longitudinal section on the line 8—8 of Figure —7—.

Figure —9— is a fragmentary detail transverse section on an enlarged scale on the line 9—9 of Figure —8—.

Figure —10— is a detail perspective view of the lever employed including the latch member thereof.

Figure —11— is a detail perspective view of the latch member of said lever.

In Figs. 1 to 6 inclusive of said drawing, 1 indicates the barrel of a fountain pen which is provided between its ends with a longitudinal slot 2^a in which a lever 2 is substantially completely housed, when said lever is in its closed position. The lever is pivotally mounted in said slot by means of a pivot pin 3 spanning the latter and passing through perforations 4 between the ends of the lever. The lever is of a channeled formation having paralleled side flanges 5 and a middle portion or web 6. The web is completely, and the flanges 5 are partly, cut away at one end, as indicated at 7, and the narrowed end portions of said flanges are bent to meet each other to provide a loop 8. The extreme ends of the flanges are disposed parallel and in contact with each other to form a projection 9 having a lip 10. The side flanges 5 are provided at their other ends with serrated edges providing inclined surfaces 11 and 12 extending parallel with an offset with each other and separated from each other by shoulders 13. Reciprocally mounted in said slot is a latch member 14 comprising a practically rectangular tube having its top and bottom walls extended rearwardly to provide a pair of guide flanges 15 and the side walls of the latch member 14 are provided with longitudinal slots 16 through which a guide pin 17 spanning the slot adjacent one end thereof passes. The outer face of the barrel is provided with a longitudinal groove 18 at one end 18^a of said slot in which the upper guide flange 15 of the latch member is movable. Between the ends of said latch member there is provided an inwardly projecting portion 19 between which and the last-named end wall 18^a of the slot in the barrel a compression spring 20 is interposed. The other ends of the side walls of said latch member which ends are opposite flanges 15 project slightly beyond the upper wall thereof and are provided with serrated edges 21

corresponding in form substantially with the engaging end of the lever 2. The upper inclined surfaces 11 and 12 of the side flanges of the lever are adapted to engage the lower inclined faces of the ends of the side walls of the latch member (see Fig. 2) to effect movement of the latch member against the action of said spring 20 when the lever is forced to its closed position, whereupon the spring is adapted to return the latch member to the forward limit of its movement to cause the shoulders 22 to engage the shoulders 13 of the lever to hold the same in closed position.

The other end of the slot terminates in a groove 23 on the inner face of the circumferential wall of the barrel which groove constitutes an extension of said slot in which groove the looped end of said lever is received when the latter is in closed position.

Mounted within the barrel at one end thereof is a guide member comprising a circular plate 24 having two arcuate flanges 25 extending from its rear face, and which are adapted to abut against the inner face of the end wall 26 at the closed end of the barrel. The plate 24 has similar arcuate flanges 27 extending from its other or front face and these flanges 27 are flared outwardly and terminate in sharp edges so that when said guide member is forced into the closed end of the barrel said sharp edges of said flanges 27 will engage in the inner face of the circumferential wall of the barrel to prevent outward movement of said guide member. The plate 24 is provided with a transverse slot 28 which extends diametrically thereof so that one end thereof is disposed in direct alignment with the slot in which the lever 2 is housed.

As shown in Figure —1— the pressure bar 29 is provided at its rear end with two opposed edge recesses or notches 30 providing a relatively thin neck which is received in and is reciprocally movable in the slot 28 in said plate 24. The said pressure bar 29 is engaged with said plate 24 by first turning the bar 29 so that the head 29^a may be readily inserted through said slot and then turning the bar 29 through an arc of ninety degrees to the position shown in Figs. 1 and 2.

The said pressure bar is provided between its ends with a longitudinal slot 31 in which the lip 10 of the projection 9 of the lever normally engages and in which the body of the projection 9 is adapted to engage when the lever is turned to its open position indicated in dotted lines in Figure —2—. As said lever is turned to said open position the inner face of the loop 8, contiguous to the projections 9 bear upon the pressure bar 29 on opposed sides of the longitudinal slot 31 therein thus forcing the bar 29 downwardly to collapse the ink sack

32. Secured to the upper face of the pressure bar at one end thereof is a spring 33 which is bowed from its secured end to a point between its ends, and there at said point provides a V-shaped portion 34 which is disposed directly underneath the pivot pin 3 of the lever. The extreme other end of said spring provides a free tongue 35 which when the lever is disposed in closed position, bears upon the middle portion or web of the lever between the pivot pin 3 and the serrated or latch end of said lever. The said spring is passed through the loop 8 of the lever and the end portion of said loop engages said spring between the V-shaped portion 34 and the secured end thereof. When the lever is disposed in closed position, as shown in Fig. 2 the loop 8 tends to slightly distort or increase the bow of said spring thereby increasing the tension exerted by the end portion 35 thereof upon the lever to effect initial opening movement of the latter. It will be noted in Figure —2— that when the lever is in closed position, as shown in full lines in said figure, the loop 8 thereof is out of contact with the upper face of the pressure bar, and that the latter is suspended entirely from the spring 33. As the spring is secured to the pressure-bar between its ends, the spring will support said pressure bar and hold it snugly in contact with the inner face of the circumferential wall of the barrel throughout its length as clearly shown in Figure —2—, thus relieving the ink sack of the weight of said lever.

The operation of the pen will probably be clearly understood from the foregoing description. It will be noted that the latch member is provided in its upper wall between the ends thereof with a transverse slot 36 in which a finger nail is adapted to engage to effect movement of said latch member against the action of the spring 17 to effect disengagement of the shoulders 13 and 22. Thereupon the end portion 35 of the spring 31 will effect an initial opening movement of the lever so that the lever's serrated rear end extends free of the outer circumferential face of the barrel. Said serrated end of said lever may thereupon be engaged with the fleshy part of the thumb and moved to its open position shown in dotted lines in Fig. 2 thereby causing the pressure bar to collapse the sack preparatory to effecting filling thereof in the manner customary with all lever actuated self-filling fountain pens.

The construction shown in Figures —7— to —11— inclusive, is slightly different in some details from that shown in Figures —1— to —6— inclusive. This difference resides entirely in two points, namely: in the last-named construction the lever 37, corresponding to the lever 2 shown in Figs. 130

1 to 6 inclusive, is provided between its ends with two bottom wall portions 38 and 39, whereby said lever is rendered partially tubular. One of said tubular portions is closed at one end by a flange 40 extending upwardly from the end of the bottom wall 38 farthest removed from the bottom wall 39. A latch member 41 is reciprocably movable in the tubular portion of said lever of which the bottom wall 39 constitutes a part and a projection 42 on said latch member projects into the open portion of the lever between the walls 38 and 39 and constitutes a stop coacting with the forward end of the wall 39 to limit the movement of the said latch member 41 in one direction. A helical compression spring 43 is disposed between the flange 40 and the inner end of the latch member 41 and within the tubular portion of the lever bordered in part by the wall 38 and into which tubular portion the inner end of the latch member 41 projects. The outer end of the latch member 41 is provided with a V-shaped projection 44, the lower inclined face of which is adapted to engage a latch pin 45 which spans the rear end of the slot in the barrel housing said lever and when said lever is in closed position said pin will engage the upper inclined surface of the V-shaped projection, thus serving to hold said lever in its closed position. The latter is provided with a projection or lip 46 which overhangs the upper inclined surface of the V-shaped projection 44 and normally lies in a finger nail groove 47 at the rear end of the slot in the barrel so that the lip 46 may be engaged by the thumb or finger nail to raise said lever to open position. The engagement of the finger nail with said lip 46 will automatically cause the operator to move the latch member 41 against the action of the spring 43, thereby releasing the V-shaped projection 44 from engagement with the latch pin 45. In closing the lever pressure of the finger upon the outer surface of said lever will cause the latch member 41 to be moved inwardly under the influence of the sliding contact of the lower inclined surface of the V-shaped projection 44 with the latch pin 45 in an obvious manner.

Another slight difference in construction resides in the details of the spring 48 which is identical with the spring 33 of Fig. 2 except that the rear end portion 35 of the latter is omitted. Its engagement with the loop 8^a of the lever is the same as hereinbefore described with reference to Figures —1— to —6— inclusive, but inasmuch as the lever of this pen of Fig. 8 is adapted to be initially moved to open position by engagement of the finger nail with the latch member as above set forth, the feature of initial opening by action of the spring on the pressure bar as in Fig. 2 is obviously

unnecessary and it is, therefore, omitted as is shown in Fig. 8, when the lever 37 is closed, the free portion of the spring 48 is depressed and its elbow portion 49 is caused to project into the slot in the pressure-bar. 70

While I have shown the preferred embodiments of the invention in the accompanying drawings, it will be understood, of course, that such embodiments may be changed and varied in details of construction without departing from the invention as defined in the appended claims. 75

I claim as my invention:

1. In a fountain pen of the kind specified, a pressure bar provided between its ends with a longitudinal slot, an actuating lever pivotally mounted in the pen barrel and provided at one end with a projection engaging in the slot in the bar for preventing lateral movement or tilting of said bar, a spring secured at one end to said pressure bar and engaging said lever between the spring ends for suspending said bar from said lever, and latching means associated with said lever and the pen barrel for holding said lever in closed position against the action of said spring. 80

2. In a fountain pen of the kind specified, a pivoted lever provided at one end with a loop and a projection, a pressure bar provided between its ends with a longitudinal slot in which the projection of said lever is adapted to engage, a flat spring secured at one end to said pressure bar and projecting through said loop of said lever for suspending said bar from said lever, and means associated with the lever and the pen barrel for latching said lever in closed position against the action of said spring, the latter adapted to be bent as the lever is closed and the pressure bar forced into engagement with the inner wall of the barrel. 85

3. In a fountain pen of the kind specified, a pivoted lever provided at one end with a loop and a projection, a pressure bar provided between its ends with a longitudinal slot in which the projection of said lever is adapted to engage, a flat spring secured at one end to said pressure bar and projecting through said loop of said lever for suspending said bar from said lever, the free end portion of the spring bent to project upwardly from the bar and bearing against the lever to resist closure thereof, and means associated with the lever and the pen barrel for latching said lever in closed position against the action of said spring, the latter adapted to be bent as the lever is closed and the pressure bar forced into engagement with the inner wall of the barrel, the free end portion of the spring automatically effecting initial opening movement of said lever when said latching means are released. 90

4. In a fountain pen of the kind specified, 130

a pivoted lever provided at one end with a loop and a projection, a pressure bar provided between its ends with a longitudinal slot in which the projection of said lever is adapted to engage, a flat spring secured at one end to said pressure bar and projecting through said loop of said lever for suspending said bar from said lever; the free end portion of said spring extending angularly upwardly from a point between the ends of said spring and having a terminal elbow portion, the said free end portion adapted to be depressed as the lever is closed to cause the elbow portion of said spring to project into the slot in the bar, and means associated with the lever and the pen barrel for latching said lever in closed position against the action of said spring, the latter adapted to be bent as the lever is closed and the pressure bar forced into engagement with the inner wall of the barrel, the free end portion of the spring automatically effecting

initial opening movement of said lever when said latching means are released.

5. In a fountain pen of the kind specified, a pressure bar provided between its ends with a longitudinal slot, an actuating lever pivotally mounted in the pen barrel and provided at one end with a projection engaging in the slot in the bar for preventing lateral movement or tilting of said bar, a spring secured at one end to said pressure bar and engaging said lever between the spring ends for suspending said bar from said lever, and latching means associated with said lever and the pen barrel for holding said lever in closed position against the action of said spring, and means associated with the pen barrel and the pressure bar for preventing longitudinal movement of the latter as said lever is turned to depress said bar.

RUDOLPH WM. LOTZ.