April 12, 1927. 1,624,194

J. C. WAHL

FOUNTAIN PEN

Filed July 15, 1922

Fig. 1

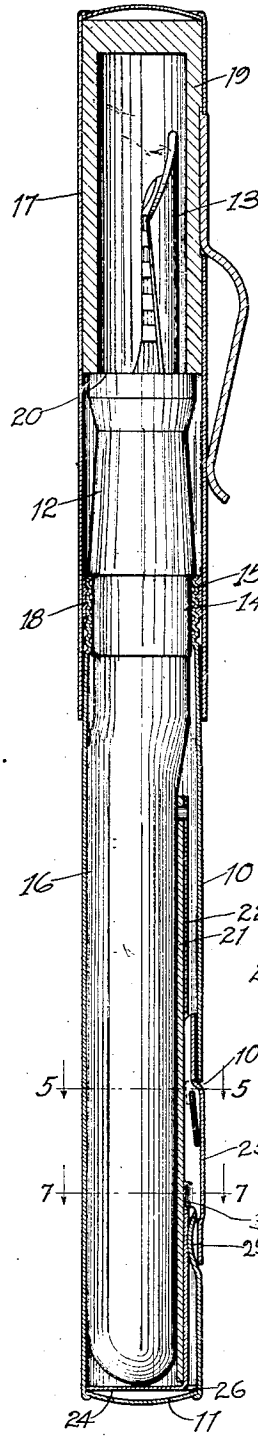


Fig. 3

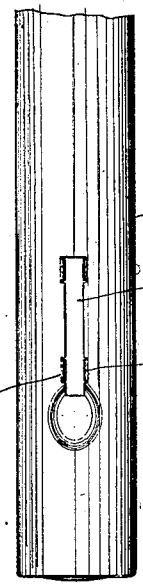


Fig. 2

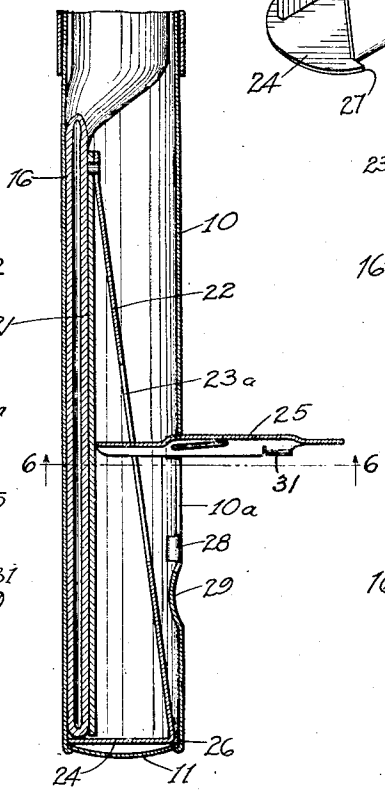


Fig. 4

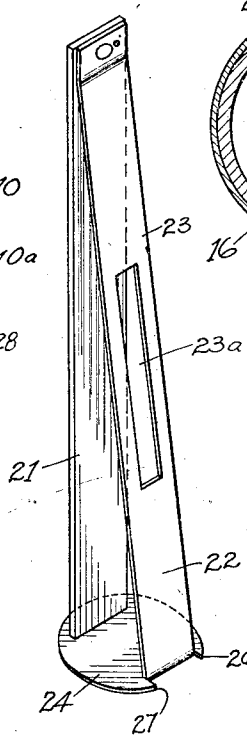


Fig. 5

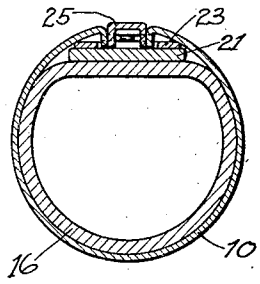


Fig. 6

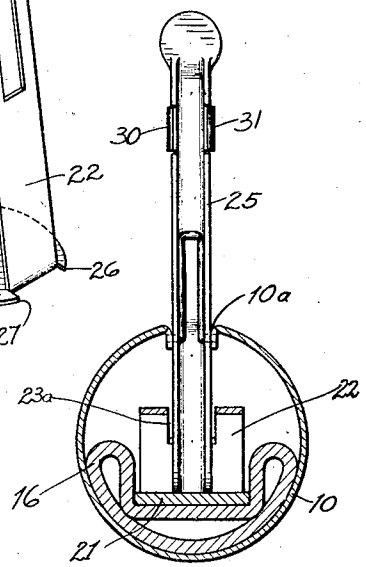
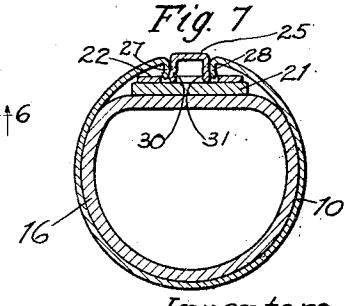


Fig. 7



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UNITED STATES PATENT OFFICE.

JOHN C. WAHL, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WAHL COMPANY, OF WILMINGTON, DELAWARE, A CORPORATION OF DELAWARE.

FOUNTAIN PEN.

Application filed July 15, 1922. Serial No. 575,320.

My invention relates to fountain pens, and more particularly to fountain pens carrying a compressible ink reservoir within the barrel, whereby by compression thereof the expansion of the ink reservoir will, by means of suction, draw ink into it.

An object of my invention is to provide means to effect a compression of the ink reservoir and means which will render the aforementioned means inoperative under normal conditions.

A further object is the provision of improved means for returning the presser bar, which is adapted to compress the ink sack, to its inoperative position after the said operation of compressing the ink sack has been effected.

Other objects will appear hereinafter, reference being had to the accompanying drawings in which:—

Fig. 1 is a central longitudinal sectional view of a fountain pen embodying my invention,

Fig. 2 is a longitudinal sectional view of the barrel portion of a fountain pen with the lever in its open position,

Fig. 3 is a plan view of a portion of the barrel showing the lever removed.

Fig. 4 is an assembled view of the presser bar and spring return in the position as shown in Fig. 2,

Fig. 5 is a cross sectional view on the line 5—5 of Fig. 1,

Fig. 6 is a cross sectional view on the line 6—6 of Fig. 2 and,

Fig. 7 is a cross sectional view on the line 7—7 of Fig. 1.

Referring to the drawings, the numeral 10 indicates a thin metal sheathing having a slot 10^a stamped therein, with a tassie 11 spun in the rear end forming the barrel portion of the fountain pen. 12 is the pen section and 13 the pen nib. At the rear end of the pen section 12 is a plug 14 adapted to fit within and frictionally engage the threads 15 at the open end of the barrel 10. Attached to the rear end of the plug 14 is an ink reservoir 16, preferably made of rubber, extending the entire distance within the barrel. Suitable means are provided for conveying the ink from the ink reservoir 16 through the pen section to the pen nib 13. 17 is a metal cap having a threaded band 18 soldered therein adjacent the open end thereof. The threads on the band 18 are adapted to mesh with the threads 15 in the barrel 10 when the pen is not in use. An inner cap 19 is also provided forming a chamber for the pen section. When the cap 17 is screwed on the barrel 10, the shoulders 20 formed by the pen section 12 abut the end of the inner cap 19 and form a pocket which will prevent, in the event the pen point is turned downwardly, any ink which might escape from the pin nib from leaking out of the chamber down along the pen section 12, thus soiling the fingers of the holder when in use.

Between the outer circumference of the ink sack 16 and the inner circumference of the barrel 10 is a presser bar 21. The spring 22, functioning to hold the presser bar in relief of the ink sack when in its inoperative position is cut from a blank of spring steel, comprising a rectilinear shaped arm 23 with a longitudinally extending slot 23^a cut therein, and a disc 24 formed at one end dimensioned for conformity with the inner circumference of the rear end of the barrel 10. To place the spring 22 in its operative form, the arm 23 is bent at a right angle to the disc 24, and the free end of the arm is affixed, by riveting or otherwise, to one end of the presser bar 21, the presser bar extending adjacent the under side of the arm 23, to a point a trifle short of contacting with the disc 24. As is best illustrated in Fig. 4, it will be seen the original length of the arm 23 is increased due to the fact that the disc 24 is cut inwardly a short distance along the sides of the arm 23 allowing the points 26 and 27 to extend upwardly beyond the top surface of the arm 23 when it has been bent to its operative position.

As heretofore described, the disc 24 is dimensioned to conform with the inner circumference of the barrel 10, the arm 23 will lie in complete relief of the inner surface of the barrel 10 a distance equal to the distance between the top surface of the arm 23 and the points 26 and 27. By referring to Fig. 1 it will be noted that when the lever is in closed position, the sides thereof extend inwardly beyond the thickness of the sheathing forming the barrel, pass through the slot 23^a and rest against the top surface of the presser bar 21, lying adjacent the inner side of the spring arm 23. The use of a disc and spring arm fashioned in this

manner, and functioning as the means for returning the presser bar to its normal position after depressing the ink sack, and holding it in such normal position unless exterior force is exerted in opening the lever, will permit the use of a lever the thickness of which is greater than the thickness of the metal barrel, and yet the top of the lever, when in closed position, will be flush with the surface of the barrel surrounding it, and still allow the ink sack to expand to its fullest capacity.

The lever 25 is fulcrumed in the slot 10^a as described in the patent to Tefft No. 1,446,524, and it is thought unnecessary to burden this application with a detailed description of the same. However, briefly described, the forward end of the lever 25, being the portion extending within the barrel when the lever is in open position, will, when the user desires to fill the reservoir with ink, pass through the slot 23^a in the spring arm 23 and contact with the presser bar immediately therebelow and press it downwardly against the ink reservoir 16, expelling therefrom any air which may be in the reservoir, thereby placing the spring arm under tension, and upon returning the lever to its closed position, the tension of the spring arm 23 will be released and the arm will resume its normal position, thus allowing the ink reservoir to be filled with ink by means of suction.

In stamping the longitudinally extending slot 10^a in the barrel 10, the edges at the rear end of the slot are so inturned as to form the flanges 27 and 28, said flanges being deflected outwardly at their extreme ends making a curved surface. For the purpose of understanding the description more clearly, the rear end of the slot is the end adjacent the detent or recess 29 in the barrel 10 which is adapted to receive the extreme end of the lever 25, so that the top surface thereof will be flush with the circumferential surface of the barrel 10 when the lever is in closed position. A transverse incision in the sides of the lever near the free end thereof form the lugs 30 and 31, said lugs being flexed outwardly. When the lever is in closed position the lugs 30 and 31 will strike against the sides of the flanges 27 and 28, and due to the resiliency of the lugs 30 and 31, they will adhere to the general contour of the flanges 27 and 28, thus forming a locking arrangement which will require the use of exterior force to open the lever.

The method of assembly is as follows:

After the spring 22 has been stamped from a blank of spring steel, and the arm 23 with a longitudinally extending slot cut therein, has been bent at a right angle to the disc 24, one end of the presser bar is then permanently affixed to the free end of the arm 23, the presser bar extending along and adjacent the under side of the arm 23. The spring 22, consisting of the arm 23 and the disc 24, having affixed thereto the presser bar 21, is then inserted through the rear end of the barrel 10, the disc 24 lying near the open end thereof. The tassie 11 is then spun in the open end of the barrel, such operation causing a tight friction between the disc 24 and the inner surface of the barrel 10, thus holding the spring 22 from a longitudinal movement within the barrel 10.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

I claim:

1. In a fountain pen, a thin metal casing provided with a longitudinally extending slot, a lever extending through said slot and pivotally mounted therein, a disc adapted as a closure for one end of the casing, a slotted resilient member extending forwardly into the casing from said disc and integral therewith, a presser bar fixed to the movable end of said resilient member, and projections on said disc extending on either side of said resilient member for engaging the inner surface of the casing, one end of said lever being adapted to extend through the slotted resilient member for pressing against said pressure bar.

2. In a fountain pen, a barrel having formed therein a longitudinally extending slot, a lever pivoted in said slot, a transversely extending disk fixed in that end of the barrel uppermost when in writing position, a flat spring arm integral with said disk and normally extending within the barrel substantially at right angles to said disk, but joining with the disk on a line spaced inwardly from the margin thereof to increase the length of the spring arm and to provide clearance for the same, a presser bar secured to the free end of the spring arm, and a slot in said spring arm through which said lever extends to operate said presser bar against the tension of the spring arm.

In witness whereof, I have hereunto subscribed my name.

JOHN C. WAHL.