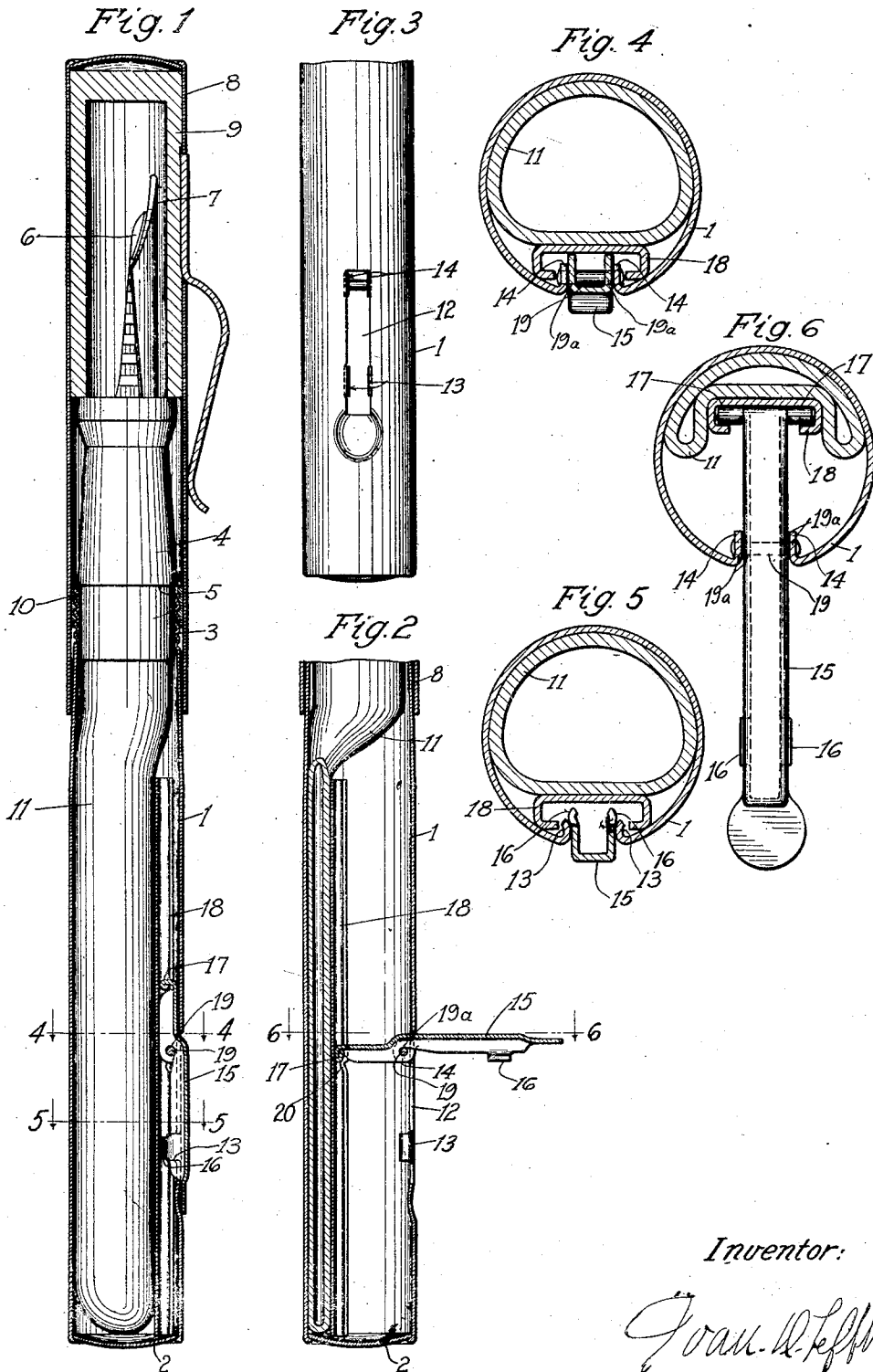


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FOUNTAIN PEN

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Inventor:

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# UNITED STATES PATENT OFFICE.

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## FOUNTAIN PEN.

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My invention relates to fountain pens, and primarily to that class commonly known as the all metal self filling type. The invention has for its general object the provision of a filling device that is novel of construction, simple of assembly, and inexpensive to manufacture.

The special objects of this invention have reference to details with respect to the fashioning of the lever and its relationship to the barrel in the matter in the provision of locking means to hold the lever in closed position and the positioning of the pivot means with respect to the slot in said barrel, also to details with respect to the formation of the pressure bar and the relationing of the lever thereto, and also includes a relationing of the pressure bar, a closure member for one end of the barrel and the lever, with respect to its pivot and the end wall of the slot in the barrel for the purpose of minimizing strain upon the pivotal support for the lever.

Further objects of my invention will appear hereinafter as the specification proceeds.

The invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which,

Fig. 1 is a view of my invention, partially in section, partially in plan, showing the lever controlling the filling device in closed position.

Fig. 2 is a view of my invention, partially in section, partially in plan, showing the lever controlling the filling device in open position.

Fig. 3 is a fragmentary plan view of a portion of barrel illustrating the method of fixing and locking the lever thereto.

Fig. 4 is a cross sectional view on the line 4—4 of Fig. 1.

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

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

The present invention is directed to the matter of cheapening first cost as well as to utility in the manufacture of fountain pens.

A number of years of experience in the manufacture of fountain pens and in the use and observance of various kinds of filling devices, and knowledge of the expense attending such manufacture, has caused appli-

cant to make careful study with reference to means for simplifying and cheapening structure as well as to the matters of appearance and the utility; and the present structure has been developed as a result of such experience, and produces a very simple and cheap filling device, that has all the characteristics for utility, stability, and appearance that are required for a merchantable pen.

In Fig. 1 the numeral 1 indicates a relatively thin hollow metal barrel, being closed at one end by means of a tassie 2 spun therein, and being reinforced and reduced at the opposite end 3 by the rolling of threads therein. A rubber pen section 4 having an abutment 5 is removably mounted in the open end of the barrel, the internal threads rolled in the barrel frictionally holding the abutment 5 therein, and mounted in the pen section is the usual feed 6 and nib 7. A metal closure cap 8 is provided, said closure cap having a rubber shell 9 closed at one end, fixed within said cap at its innermost extremity. An internally threaded collar 10 is fixed within the cap the threads on said collar being adapted to engage corresponding threads on the barrel 6 causing the closure cap to be firmly locked on the barrel when the pen is not in use. The threaded collar also co-acts with the threads on the barrel to cause the flange on the uppermost portion of the pen section to firmly engage the lower edge of the rubber shell 9, thus preventing the entrance of air into the chamber thus formed.

Fixed to a reduced portion of the abutment 5 of the pen section 4 is a rubber sack 11 which, when the pen section and barrel are assembled, is adapted to extend into the barrel as shown in Fig. 1.

Stamped in the barrel 1 is a longitudinally extending slot 12. In stamping the slot 12, its edges are so bent as to form inturned flanges at 13 and 14 whose function will hereinafter be described.

A lever 15 being so formed as to provide wings 16 at its outermost extremity and outwardly extending lugs 17 at its innermost extremity, the innermost extremity being that portion of the lever that extends through the slot in the barrel, co-acts with a pressure bar 18 to depress the ink sack mounted directly therebelow. Correspond-

ing apertures 19<sup>a</sup> are punched in the sides of the lever about midway between the lugs 17 and the wing 16. Apertures corresponding to the aforementioned apertures in the sides of the lever 15 are punched in the flanges 14 before said flanges are inturned. The lever 15 is fulcrumed in the slot by placing a pin 19 through the corresponding apertures in the flanges 14 and the sides of the lever 15. The pin is then riveted or turned over at its opposite ends which causes the lever to be firmly fixed in the slot though permitting it to be readily opened and closed.

The method used in my device in depressing the ink sack is similar to that shown in Patent No. 726495 granted to J. Barnes, April 28, 1903, namely: The lugs 17 engage under flanges formed on the pressure bar 18, said lugs being permitted to move longitudinally in said flange, it being so formed as to cause the pressure bar to be lowered when the lever is opened, and raised when the lever is closed.

Stops are provided on the barrel and pressure bar to prevent the lever from being opened further than a position directly perpendicular to the pressure bar when the lever is standing open, one of the stops being formed by the lever abutting against the end of the slot 12. This is possible because of the fact that the lever is fulcrumed below the level of the slot. The other stop is formed by indenting the pressure bar as at 20 which acts as a stop when lugs 17 come in contact with said indentations 20, the pressure bar 18 being incapable of longitudinal movement in the direction of the lever because of the fact that it abuts the end of the barrel 1.

In the Barnes mechanism hereabove noted no means are provided for holding the lever in a closed position other than the natural elasticity of the ink sack. It has been found that the use of ink in these rubber sacks causes them to shrink, thus permitting, when used with the Barnes mechanism, the pressure bar to drop which will result in the lever standing in a partial open position. In my invention means are provided to lock the lever in a closed position thus eliminating this difficulty.

The wings 16 on the lever 15 are bent outwardly as is shown in Fig. 5 to form beads. In closing the lever the wings, having the beads thereon, frictionally engage the sides of the inturned flanges 13, and lock under the edges of the flanges. A slight pressure applied to the lever directly over the wings is necessary in order to cause the wings 16 to be depressed and when said depressed wings are forced between the flanges a sufficient distance the beads will snap outwardly thus causing the lever to be locked.

Inasmuch as the operation of filling the

pen is old, it is thought not necessary to prolong the specification by adding such a description.

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.

Having described my invention, what I desire to secure by Letters Patent in the U. S. Patent Office is:—

1. In a fountain pen, in combination, a shell provided with a longitudinally extended opening therein, fashioned at its lateral marginal edges to provide a support for a pivot pin and locking members, a closure cap for one end thereof, a pressure bar fashioned with longitudinally extending grooved portions therein and with a lateral depression extending into the slotted way to form a stop for a lever member, a pivot member associated with said pivot supports, positioned below said slot, and a lever fashioned for engagement with said pivot members and for shiftable relation with respect to the grooves in the pressure bar, provided with resilient members thereon, fashioned with respect to the locking members on the shell, to co-act therewith to cause the lever to be locked in closed position, and means including the relationing of the cap closure member, the pressure bar, the pivot member with respect to the shell, and the outward end wall of the slot, to facilitate, when the lever is in open position, a coincident abutment of the rear end of the pressure bar with the cap member of the shell, and the lever with the forward end of the slot, whereby strain from the pivoting parts is minimum, and whereby the relative positioning of the pin with respect to the rear end wall of the slot, and the form of the lever when the lever is in closed position, is such that abutment relation will be established between the arcuately shaped portion of the lever and the forward end wall of the slot.

2. In a fountain pen a barrel having a longitudinal opening, a pressure bar within the barrel, a pin positioned transversely of said barrel and spaced below said opening, and a lever pivoted on said pin and having laterally extending projections engaging said pressure bar, the said lever having downwardly extending projections formed about said pin and downwardly extending resilient members adapted to interlock with the lateral margins of said opening.

3. In a fountain pen, in combination, a casing having a rear end closure and provided with a longitudinal slot, a channelled

presser bar, fashioned with a stop member thereon, a pivot member below the slot opening, a lever pivoted thereon, its forward end fashioned to engage the channelled way of the presser bar and including a relationing of the lever to the presser bar and the lever pivot to the forward wall of the slot whereby, when the latter is in extreme opened position, the presser bar will be in abutment with the rear closure member of the casing and the forward wall of the slot, thereby protecting the pivot relationing of the lever to the pivot pin against excessive strain.

4. In a fountain pen, in combination, a slotted casing provided with pivot seats below the lower edges of the material forming the slot, a lever pivotally related to said pivot seats its exterior face being provided with a compensating offset to level a portion of its face length with respect to the outer face of the casing when the lever is in closed position, while, the other portion of the lever will lie within the casing and including a relative spacing of the pivot support for the lever with respect to the rear wall of the slot in the casing, that when the lever is closed a continuous surface presentation of the lever face and casing wall will be effected.

5. In a fountain pen, in combination, a slotted casing having a rear end closure, a lever in the lower edges of the material forming the slot pivotally supported at a point below the slot and provided with a compensating offset intermediate its length to effect a continuous outer surface presentation with respect to the lever and casing when the lever is in closed position, while a portion of the face of the lever will lie within the casing, and a presser bar connected with the lever and including a relationing of the lever to the presser bar and of the le-

ver pivot to the wall of the slot whereby when the latter is in extreme open position the presser bar will be in abutment with the rear closure member of the casing and the lever in substantial clearance of the forward wall of the slot.

6. In a fountain pen, in combination, a slotted casing provided with a rear end closure member, a pivot support for a lever spaced below the lower edges of the material forming the slot, a lever on the pivot provided with a face offset intermediate its length to effect a continuous surface presentation with respect to the lever and the casing when the former is in closed position, a presser bar connected with the lever and including such relative proportioning and positioning of the parts that when the lever is in substantially vertical position the presser bar will be in abutment with the casing closure wall, and the lever in clearance of the slot wall, and when in closed position a continuous surface presentation with respect to the lever and casing will be presented.

7. In a fountain pen a casing having an elongated slot therein, a lever pivotally mounted in said slot, a pressure bar in said casing having an elongated grooved portion, the inner ends of said lever having laterally extending lugs adapted to have sliding engagement with said grooved portion or the pressure bar, the rear end of said pressure bar being adapted to strike the rear end of the casing when the lever is in open position, and a stop formed in said grooved portion of the pressure bar to prevent further opening movement of the lever when the pressure bar strikes said rear end of the casing.

In witness whereof I have hereunto subscribed my name.

IVAN D. TEFFT.