

Jan. 19, 1937.

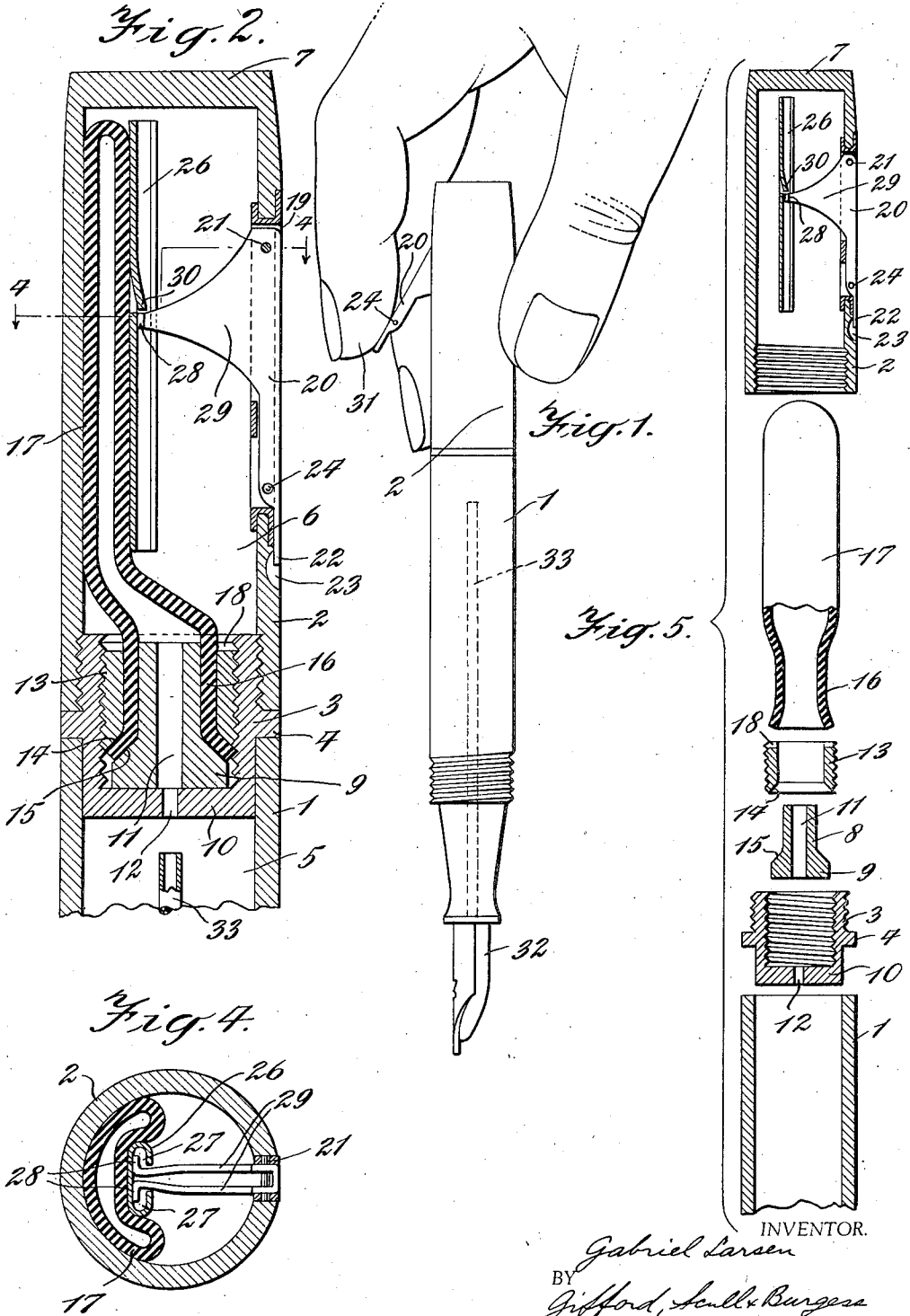
G. LARSEN

2,068,419

FOUNTAIN PEN

Filed July 26, 1935

2 Sheets-Sheet 1



INVENTOR.
Gabriel Larsen
BY
Gifford, Scull & Burgess
ATTORNEYS.

Jan. 19, 1937.

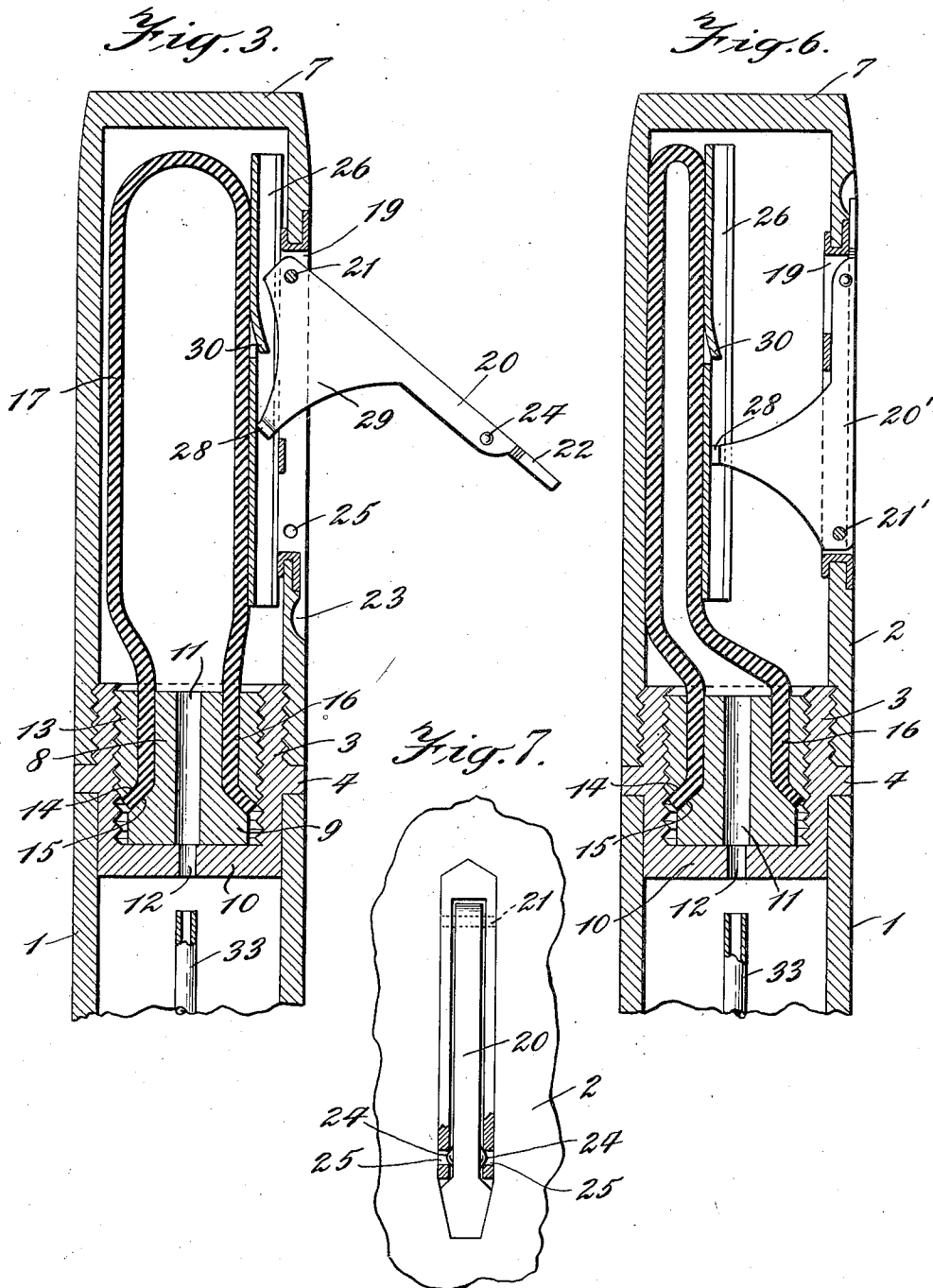
G. LARSEN

2,068,419

FOUNTAIN PEN

Filed July 26, 1935

2 Sheets-Sheet 2



INVENTOR.
Gabriel Larsen
BY *Gifford, Scull & Burgess*
ATTORNEYS.

UNITED STATES PATENT OFFICE

2,068,419

FOUNTAIN PEN

Gabriel Larsen, Springfield, N. J., assignor to
L. E. Waterman Company, New York, N. Y., a
corporation of New York

Application July 26, 1935, Serial No. 33,276

8 Claims. (Cl. 120—46)

This invention relates to a novel and improved form of fountain pen, the novel features of which will be best understood from the following description and the annexed drawings, in which I have shown a selected embodiment of the invention and in which:

Fig. 1 is an elevation of a pen constructed according to this invention and illustrating the manner of operating the same;

Fig. 2 is a vertical sectional view through the upper part of a pen constructed according to the invention and showing the parts in one position;

Fig. 3 is a view taken on the same plane as Fig. 2, but showing certain of the parts in different positions;

Fig. 4 is a section approximately on the line 4—4 of Fig. 2;

Fig. 5 is an exploded view of the parts appearing in Figs. 2 and 3, but with the parts drawn on a smaller scale;

Fig. 6 is a view similar to Fig. 2, but showing a slightly different arrangement of the parts;

Fig. 7 is a view of the operating lever of Figs. 2 and 3 as viewed from the right of Fig. 2.

In the construction of fountain pens equipped with pump sacs in a pump chamber, various arrangements have been contrived for operating such sacs by alternate collapsing and expansion thereof. One such device is a lever pivoted to the walls of an opening in the barrel wall and operated by the finger of the user. In all forms of lever operated devices known to me, it has been customary to arrange the lever so that it will normally lie within the opening in the barrel wall when not in use, and when so situated the sac is fully expanded. Then when it is desired to operate the lever to fill the pen, the lever is moved outwardly away from the barrel to contract or collapse the sac, although in some constructions, such as shown in the patent to Borbeck 1,268,206, a lever is provided which collapses the sac by pushing inwardly.

According to my invention, I so arrange the lever and parts associated therewith that the lever in its normal position in the opening in the barrel wall will maintain the sac collapsed. Then when the lever is released from its usual locking means, the resiliency of the sac or other pumping device will force the lever outwardly on its pivot.

The invention will be more fully understood from a detailed description of the drawings.

The invention is shown as embodied in a fountain pen having a barrel which has two sections 1 and 2 disposed coaxially with each other, and

each detachably secured to a plug 3 which has an outwardly extending flange 4 against which the adjacent edges of the walls of the two barrel sections engage. The plug is of a special form more fully described and claimed in the copending application of myself and Henry N. Briechle, Ser. No. 15,044, filed April 6, 1935. The plug forms a partition between the ink reservoir 5 in the section 1 and a pump chamber 6 in the section 2, this latter section having an end or top 7 closing the chamber. For the sake of convenience, I shall refer to the various parts as if the pen were held in a vertical position.

The plug is in the form of a cup in which is disposed an insert 8 having a head 9 resting against the bottom 10 of the cup and having a vent 11 communicating with a vent 12 in the bottom. The wall of the cup may be secured to the walls of the sections 1 and 2 in any suitable manner, and is preferably threaded interiorly, as shown, to engage an inner sleeve 13 provided with an internal wedge face 14 coacting with an external wedge face 15 on the head 9 of the insert to clamp therebetween the neck 16 of the sac 17. The sleeve 13 may be provided with a slot 18 for engagement with a suitable tool to turn the sleeve 13.

Mounted in an opening 19 in the wall of the section 2 is a lever 20 pivoted adjacent one end of the lever to the walls of the opening adjacent one end of the opening, the pivot being indicated at 21. The other end of the lever normally lies adjacent the other end of the opening 19 and is provided with the usual thumb piece 22 lying over a recess 23 in the barrel, so that a thumb nail may be placed under the thumb piece to raise the lever. The lever is usually held in its normal position where it lies within the opening by releasable locking means exemplified by projections 24 received within recesses 25 when the lever is in its normal position. This locking means in itself is well known in the art.

Operating levers are usually pivoted between their ends so that raising of the lever at one end will depress it at the other, and it is also usual for the sac to be expanded when the lever is in its normal position in the opening in the wall of the barrel. According to my invention, however, I provide an arrangement by which, when the lever is in such normal position, the sac will be collapsed, as shown in Fig. 2. For that purpose, I provide a bar 26 lying against one side of the sac 17 and having oppositely disposed channels 27 therein to receive tongues 28 on arms 29 integral with the lever, these arms and the lever

together forming a lever of the bell crank type. Sliding of the bar 26 downwardly to a point where it would pinch the collapsed sac is prevented by engagement of a lug 30 with the tongues 28.

In Fig. 2 is shown the normal position of the parts. When it is desired to pump ink into the reservoir 5, the nail of a thumb or finger may be inserted under the thumb piece 22, and the lever may be released from the locking means 24—25. The resiliency of the sac, which is normally made of soft rubber, as known in the art, will at once act against the bar 26, and through the arms 29 will force the lever 20 outwardly to some such position as shown in Fig. 3. The pen may be held in the fingers of one hand, as indicated in Fig. 1, and the lever 20 may be actuated by one of the fingers 31 so as to force the lever downwardly to collapse the sac. Then releasing of the pressure of this finger will cause the lever to return to the position shown in Figs. 1 and 3. Continued alternate movement of the lever will result in pumping ink into the reservoir through the usual feed 32 with which is associated a vent tube 33 acting in a manner known in the art.

It will thus be seen that the device is one which can be readily operated with the fingers of one hand to fill the ink reservoir and that it is very simply and inexpensively made with a minimum of parts to get out of order.

In Fig. 6 I have shown the lever 20' as pivoted on a pivot 21' at another end of the opening 19 than that shown in the other figures of the drawings. Otherwise, the construction of Fig. 6 will operate in identically the same manner as described above.

While I have shown the invention as applied to a specific form of pen having the sac arranged in a certain manner, nevertheless it will be understood that the invention may be used with any pen sac arranged in any other position than the specific one shown, wherever it is found to be applicable.

Various changes in details may be made without departing from the scope of the invention, as defined by the appended claims.

I claim:

1. A fountain pen comprising a barrel having therein an ink reservoir and a pump chamber in line with each other, a resilient pump sac in said pump chamber and communicating with said reservoir, a bar engaging a side of said sac, a lever pivoted in an opening in a wall of said chamber and in its normal position lying in said opening, means connected to the lever to force said bar against said sac and thus collapse it when the lever is in said normal position, the resiliency of the sac tending to move the lever on its pivot outwardly from the barrel as the sac expands and being sufficient to cause said movement, and means to releasably lock the lever in its normal position against said resiliency of the sac.

2. A fountain pen comprising a barrel having therein an ink reservoir and a pump chamber in line with each other, a resilient pump sac in said pump chamber and communicating with said reservoir, a bar engaging a side of said sac, a lever pivoted at one end thereof in and adjacent one end of an opening in a wall of said chamber and in its normal position having the other free end thereof disposed in said opening adjacent the other end thereof, means connected to the lever to force said bar against said sac and thus collapse it when the lever is in said normal position,

the resiliency of the sac tending to move the lever on its pivot outwardly from the barrel as the sac expands and being sufficient to cause said movement, and means to releasably lock the lever in its normal position against said resiliency of the sac.

3. A fountain pen comprising a barrel having therein an ink reservoir and a pump chamber in line with each other, a resilient pump sac in said pump chamber and communicating with said reservoir, a bar engaging a side of said sac, a lever pivoted at one end thereof in and adjacent one end of an opening in a wall of said chamber, and in its normal position having the other free end thereof disposed in said opening adjacent the other end thereof, an arm connected to said lever and extending inwardly therefrom and bearing against said bar to force said bar against said sac and thus collapse it when the lever is in said normal position, the resiliency of the sac acting against said arm tending to move the lever on its pivot outwardly from the barrel as the sac expands and being sufficient to cause said movement, and means to releasably lock the lever in its normal position against said resiliency of the sac.

4. A fountain pen comprising a barrel having therein an ink reservoir and a pump chamber in line with each other, a resilient pump sac in said pump chamber and communicating with said reservoir, a bar engaging a side of said sac, a lever pivoted at one end thereof in and adjacent one end of an opening in a wall of said chamber, and in its normal position having the other free end thereof disposed in said opening adjacent the other end thereof, an arm rigid with said lever and connected thereto between said pivot and said free end and extending inwardly therefrom and bearing against said bar to force said bar against said sac and thus collapse it when the lever is in said normal position, the resiliency of the sac acting against said arm tending to rotate the lever on its pivot outwardly from the barrel as the sac expands and being sufficient to cause said movement, and means to releasably lock the lever in its normal position against said resiliency of the sac.

5. In a fountain pen having a resilient pump sac in the barrel thereof, a bar adapted to engage a side of said sac, a lever pivoted in an opening in the wall of said barrel and in its normal position lying in said opening, means connected to the lever to force said bar against said sac and thus collapse it when the lever is in said normal position, the resiliency of the sac tending to move the lever on its pivot outwardly from the barrel as the sac expands and being sufficient to cause said movement, and means to releasably lock the lever in its normal position against said resiliency of the sac.

6. In a fountain pen having a resilient pump sac in the barrel thereof, a bar adapted to engage a side of said sac, a lever pivoted at one end thereof in and adjacent one end of an opening in the wall of said barrel and in its normal position having the free end thereof disposed in said opening adjacent the other end thereof, means connected to the lever to force said bar against said sac and thus collapse it when the lever is in said normal position, the resiliency of the sac tending to move the lever on its pivot outwardly from the barrel as the sac expands and being sufficient to cause said movement, and means to releasably lock the lever in its normal position against said resiliency of the sac.

7. In a fountain pen having a resilient pump

sac in the barrel thereof, a bar adapted to engage a side of said sac, a lever pivoted at one end thereof in and adjacent one end of an opening in the wall of said barrel and in its normal position having the free end thereof disposed in said opening adjacent the other end thereof, an arm 5 connected to said lever and extending inwardly therefrom and bearing against said bar to force said bar against said sac and thus collapse it when the lever is in said normal position, the resiliency 10 of the sac acting against said arm tending to move the lever on its pivot outwardly from the barrel as the sac expands and being sufficient to cause said movement, and means to releasably lock the lever in its normal position 15 against said resiliency of the sac.

8. In a fountain pen having a resilient pump sac in the barrel thereof, a bar adapted to engage

a side of said sac, a lever pivoted at one end thereof in and adjacent one end of an opening in the wall of said barrel and in its normal position having the free end thereof disposed in said opening adjacent the other end thereof, an arm 5 rigid with said lever and connected thereto between said pivot and said free end and extending inwardly therefrom and bearing against said bar to force said bar against said sac and thus collapse it when the lever is in said normal position, 10 the resiliency of the sac acting against said arm tending to rotate the lever on its pivot outwardly from the barrel as the sac expands and being sufficient to cause said movement, and means to releasably lock the lever in its normal 15 position against said resiliency of the sac.

GABRIEL LARSEN.