Oct. 15, 1940. G. LARSEN 2,217,755

FOUNTAIN PEN

Filed March 3, 1939

Fig. 1.

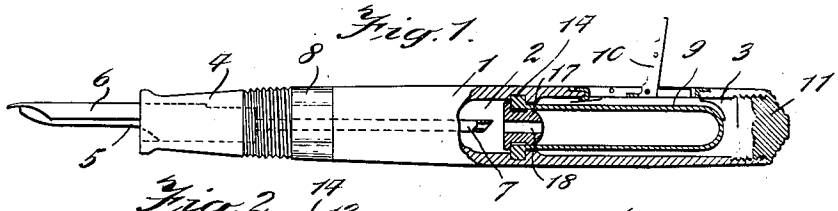
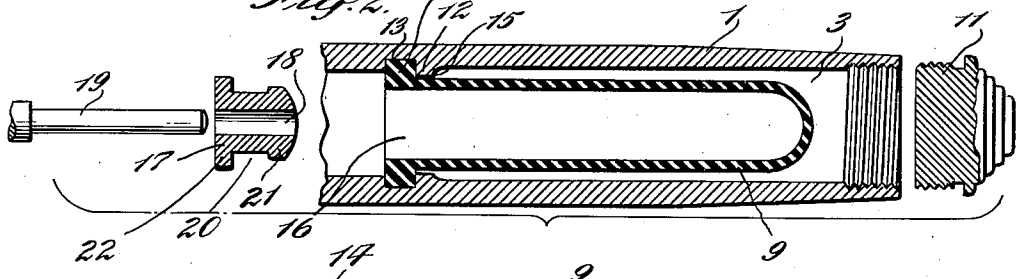


Fig. 2.



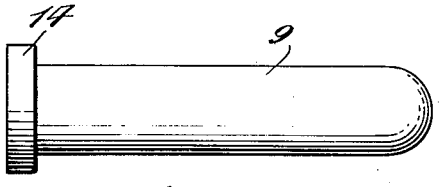
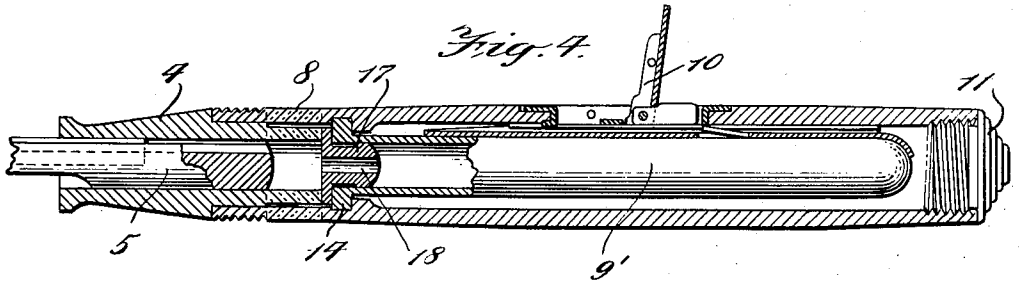


Fig. 3.

Fig. 4.



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2,217,755

FOUNTAIN PEN

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Application March 3, 1939, Serial No. 259,537

4 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 drawing, in which I have shown selected embodiments of the invention and in which:

Fig. 1 is a longitudinal view, partly in elevation and partly in section, showing one form which the invention may take;

Fig. 2 is a longitudinal sectional view of part of the structure appearing in Fig. 1 but on a larger scale and showing certain parts detached and also showing part of a tool for use in assembly, this view being taken on a different plane than that of Fig. 1;

Fig. 3 is an elevation of the sac shown in Figs. 1 and 2;

Fig. 4 is a view similar to Fig. 1 but showing a different embodiment of the invention.

Referring first to Figs. 1, 2, and 3, I have shown therein a fountain pen comprising a barrel 1 having therein a reservoir 2 and a pump chamber 3. At one end of the barrel, which for convenience may be called the lower end, is disposed any suitable feed section 4 within which is shown a suitable feed 5 and a pen point 6. The feed is provided with the usual breather tube 7 extending upwardly into the reservoir and, in the illustrated embodiment, the barrel is shown as having a transparent section 8 whereby the level of ink in the reservoir may be determined when that level is low.

Within the pump chamber is disposed a pump sac 9 which, as is well known in the art, is of soft resilient rubber and which may be actuated by a lever 10, for example in the manner disclosed and claimed in Patent 2,087,672, July 20, 1937 to Larsen et al. This sac may be inserted into the pump chamber through the upper end thereof in which is disposed a removable closure, here shown in the form of a plug 11 threaded into engagement with the barrel, as plainly indicated in Figs. 1 and 2.

At the lower end of the pump chamber the barrel is formed of an anchor part 12 of reduced diameter and having therein a recess 13 which is preferably annular and which is adapted to receive the flange 14 of the sac 9. This flange is preferably continuous around the circumference of the sac, which will normally be cylindrical, and the flange is also preferably made of the same soft resilient character of rubber as the rest of the sac, but is relatively thick and heavy, as plainly shown. The anchor part 12 is joined to the wall of the chamber 3 by a tapered shoulder 15 and thus it will be seen that the sac itself will clear the wall of the chamber 3 but that when the sac is inserted into the open upper end of the chamber the flange may be compressed enough to slide along the chamber and be guided by the shoulder 15 into the recess 13 and then the resiliency of the flange will cause it to snap outwardly into the recess and into engagement with the outer wall of the recess. The outside diameter of the flange is such that it will normally press against this outer wall of the recess, but in order to insure that the sac shall be held in position and also to provide the necessary air passage between the sac and the reservoir, I prefer to insert in the mouth 16 of the sac a plug 17 having an aperture 18 extending through it. When the sac has been put in the position shown in Fig. 2, then the plug may be engaged by a suitable tool 19 and forced into the mouth of the sac. As shown, the plug has an annular groove 20 of approximately the width of the flange 14, this forming on the plug a head 21 and a foot 22. The head 21 will press the sac above the flange outwardly against the anchor part 12, and the foot will engage the lower side of the flange, to act as a stop limiting insertion of the plug into the sac, as plainly shown in Fig. 1. At the same time the diameter of the grooved part of the plug is sufficiently great to force the flange 14 against the outer wall of the recess 13.

After the parts have been assembled as above indicated, the threaded closure 11 may be put in place and the feed section may also be attached to the barrel as known in the art and then the pen is in condition for use. At the same time, the parts may be readily assembled when necessary for repair, since the chamber 3 is readily accessible and, by removal of the feed section and associated parts, the tool 19 may be easily inserted into engagement with the apertured plug 17 for removal of that plug.

In Fig. 4 I have shown a slightly different embodiment of the invention and in which similar parts are given the same numerals and will not be described further. In this embodiment, however, the sac 9' is longer than in Fig. 1 and is adapted to be filled upon one stroke of the operating lever. In other words, Figs. 1 and 4 show two well-known types of pens to which my invention is applied.

While I have described the selected embodiments with a certain amount of detail, it is to be understood that various changes may be made without departing from the scope of the invention as defined in the appended claims.

I claim:

1. In a fountain pen, a barrel having a recess in the inner wall thereof, a rubber sac having an outwardly extending resilient flange disposed in said recess, the outside diameter of said flange being great enough to cause the flange normally to expand into said recess, and an apertured plug within said flange and forcing it outwardly into said recess, said plug having a head and a foot on opposite sides of said flange, for the purpose set forth.

2. In a fountain pen, a barrel having a chamber, a rubber sac disposed in said chamber, at one end of said chamber said barrel having an anchor part with an inside diameter smaller than that of said chamber, a tapered shoulder joining the wall of said chamber to said anchor part, said anchor part having a recess therein and said sac having a resilient flange in said recess, an apertured plug within said flange and forcing it outwardly into said recess, said plug having an annular groove opposite said flange and a head and a foot on opposite sides of said groove, said head being of such a diameter as to force the wall of the sac against the adjacent wall of the chamber, and a removable closure for the other end of the chamber.

3. In a fountain pen, a barrel having a recess in the inner wall thereof, a rubber sac having an outwardly extending resilient flange disposed in said recess, the outside diameter of said flange being great enough to cause the flange normally to expand into said recess, and an apertured plug within said flange and forcing it outwardly into said recess, said plug having a head disposed within the sac interiorly of the flange thereof and of such a diameter as to force the wall of the sac against the adjacent wall of the chamber.

4. In a fountain pen, a barrel having a chamber, a rubber sac disposed in said chamber, at one end of said chamber said barrel having an anchor part with an inside diameter smaller than that of said chamber, a tapered shoulder joining the wall of said chamber to said anchor part, said anchor part having a recess therein and said sac having a resilient flange in said recess, an apertured plug within said flange and forcing it outwardly into said recess, a foot on said plug acting as a stop to limit insertion of the plug into the sac, and a removable closure for the other end of the chamber.

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