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S. M. SAGER

2,035,278

FOUNTAIN PEN

Filed March 12, 1934

Fig. 1.

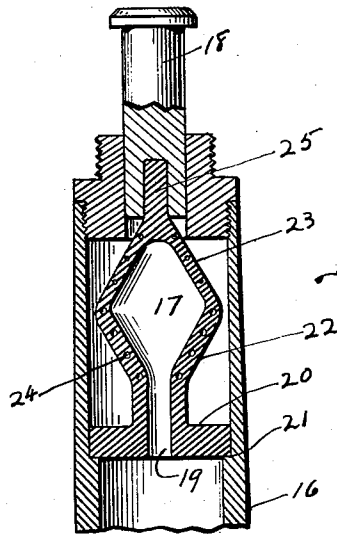
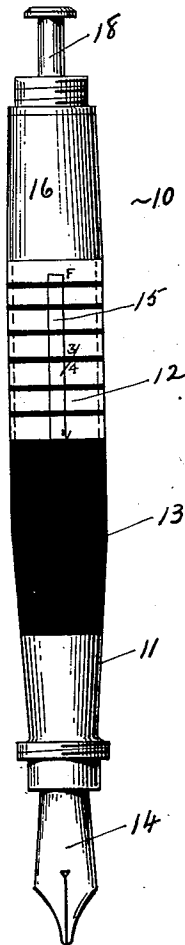


Fig. 2.

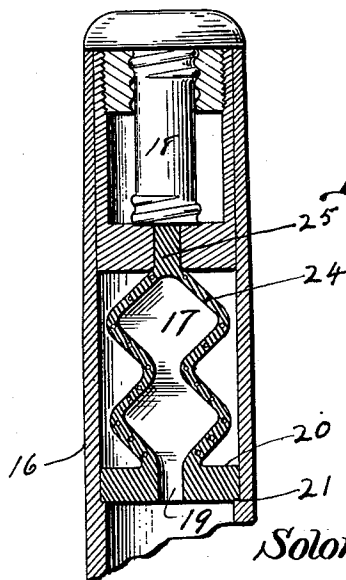


Fig. 3.

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FOUNTAIN PEN

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4 Claims. (Cl. 120-46)

It is an object of this invention to provide a fountain pen of the bellows and plunger type wherein the bellows is operable by a plunger and upon release of the plunger causes entrance of a supply of ink into the container or barrel and simultaneously acts as a spring means for returning the plunger to normal position.

Still another object of the invention is to provide an improved type of fountain pen having a plunger operated bellows engaged in a unit secured on one end of the fountain pen barrel and adapted to be so constructed that the body of the fountain pen, including the barrel and end caps, may be constructed of a plurality of different oval or flattened shapes, rather than the conventional cylindrical or round fountain pen shapes.

Another object of the invention is to provide a fountain pen having secured on one end of the barrel thereof a filling and ink supply unit.

Other and further important objects of this invention will be apparent from the disclosures in the specification and the accompanying drawing.

This invention (in preferred forms) is illustrated in the drawing and hereinafter more fully described.

On the drawing:

Figure 1 is an elevational view of the fountain pen with both end caps removed and showing a predetermined quantity of ink in the barrel.

Figure 2 is an enlarged longitudinal detailed section through the upper end of a fountain pen, illustrating a filler mechanism in the form of a bellows.

Figure 3 is a similar section illustrating another modified form of a bellows operable by means of a telescoping type of plunger mechanism.

As shown in the drawing:

A fountain pen, indicated generally by the numerals 10, comprises a passaged body or casing 11, of separable parts, which carries a pen nib 14 at its lower end and a filling device at its upper or shank end, and is adapted to provide a reservoir or barrel 12 for a quantity of writing ink 13.

The portion of the casing which provides the ink reservoir 12 is of transparent material, and is suitably graduated and marked so that one may readily note to what extent the ink 13 occupies the normal ink space.

The pen nib 14 is operably connected with the reservoir 12 by ink feeding means (not shown), and the reservoir is provided with suitable inlet means, such as an inlet tube 15 connected to the

ink feeding means at its lower end and terminating at its upper end at a point just below the shank portion 16 of the casing. A filler mechanism is disposed in the shank portion 16 of the casing 11 to suck ink through the inlet of the reservoir by the way of the tube 15, or its equivalent, and the filler mechanism comprises a bulb 17 formed of flexible material, such as rubber, and a plunger 18 suitably guided by guiding means in the casing for longitudinal movement in the casing to produce movement of the bulb 17.

The bulb 17 is closed at its upper end, and the interior of the bulb is in communication with the inlet 15 and the reservoir 12 through an opening 19 in a base flange 20 of the bulb.

The base flange 20 is of substantial thickness and of a diameter sufficient to afford a tight frictional fit with the inner face of the wall of the casing 11, and it seats tightly on an abutment 21 formed in the wall of the casing.

As is indicated by the numerals 22 and 23 of Figure 2, the wall of the bulb 17 is of graduated thickness, or may be considered as formed of integrally connected walls of different thicknesses. It will be obvious that as the head of the bulb 17 is moved downwardly by the application of a force to the plunger 18 to produce downward movement of the plunger, the converging walls 23 will pivot about the thicker wall 22 and move downwardly, and that a portion thereof will seat on the inner face of the diverging wall 22 which, in effect, provides an elastic or springy conical seat for the seated portion. It will be equally obvious that when the downward force is withdrawn from the plunger the self-restoring action of the walls of the bellows will return the bulb to its normal expanded condition, and not only push the plunger outwardly but also suck a supply of ink into the ink space of the barrel through the intake tube 15.

In Figure 3 the bulb 17 is shown as formed of a plurality of integrally connected converging and diverging walls of different thicknesses so that the structure presents a plurality of infolding walls and a plurality of elastic conical seats.

The walls of the bulb 17 may be reinforced by a wire coil or spring 24 embedded therein.

The head of the bulb is provided with an integrally connected and centrally disposed stem or finger 25 which is secured within the plunger 18, to form a convenient means for the application of the force of the descending plunger to the elastic head of the bulb.

I claim as my invention:

1. A fountain pen comprising an elongated bar-

rel having means therein defining an annular seat, a filler unit in said barrel having a base flange seated on said seat, said filler unit comprising an elongated and integral bulbous structure of resilient rubber, or the like, formed to provide spaced opposed walls of a certain thickness and other spaced opposed walls of a less thickness whereby said walls of less thickness are adapted to be resiliently seated on and between said walls of greater thickness when pressure is applied longitudinally to the bulb.

2. In a fountain pen, a filler unit comprising an elongated integral and bulbous structure of resilient rubber, or the like, provided with a base flange, and formed to provide spaced opposed walls of a certain thickness and other spaced opposed walls of a less thickness whereby said walls of less thickness are adapted to be resiliently seated on and between said walls of greater thickness when pressure is applied longitudinally to the bulb.

3. In a fountain pen, a filler unit comprising an elongated integral and bulbous structure of resilient rubber, or the like, provided with a base flange, and formed to provide spaced opposed walls of a certain thickness and other spaced opposed walls of a greater thickness shaped to define an approximately conical and resilient seat for said walls of less thickness when pressure is applied longitudinally to the bulb.

4. In a fountain pen, a filler unit comprising an elongated integral and bulbous structure of resilient rubber, or the like, and formed to define spaced rearwardly diverging walls and other spaced rearwardly converging walls whereby said diverging walls are adapted to provide a conical seat for said converging walls when said converging walls are seated on and between said diverging walls upon the application of pressure longitudinally to said bulb.

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