May 23, 1933. A. SCHLOSSER 1,910,907

FOUNTAIN PEN

Filed Jan. 29, 1932

Fig. 1.

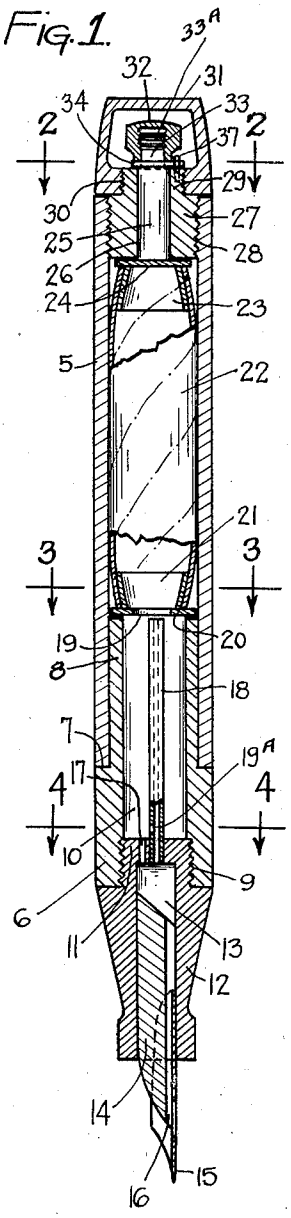


Fig. 2.

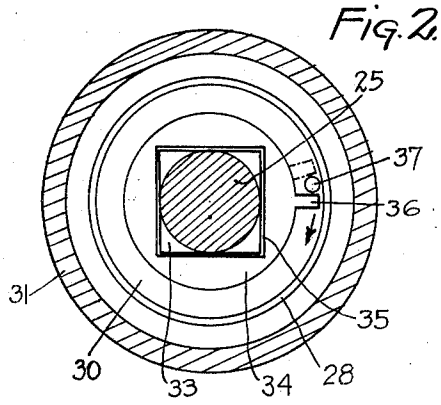


Fig. 3.

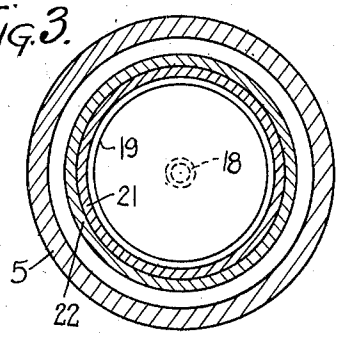
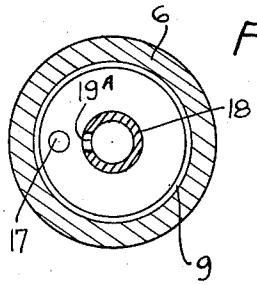


Fig. 4.



INVENTOR

ABRAHAM SCHLOSSER

BY HIS ATTORNEY

John J. Fynch

Patented May 23, 1933 1,910,907

UNITED STATES PATENT OFFICE

ABRAHAM SCHLOSSER, OF BROOKLYN, NEW YORK

FOUNTAIN PEN

Application filed January 29, 1932. Serial No. 589,659.

This invention relates to fountain pens and in particular to a self-filling type in which is incorporated a twistable sack for the purpose of expelling ink or drawing into the pen ink to be used.

An important object of my invention is the provision of means whereby one end of the sack is cemented or otherwise securely attached inside the pen barrel so that it can be effectively twisted to draw into the pen a maximum amount of ink, the sack conforming closely to the inner wall of the barrel and having a maximum capacity whereby the entire inside of the pen barrel is used wholly for ink thereby increasing the capacity of the pen and also, through the medium of my construction, making it readily fillable and cleanable.

A further object of my invention is to so construct the pen that it can be quickly filled when empty by simply removing the top cover and twisting a finger piece to twist the sack to expel from the pen barrel, the air and permit intake of the ink in the usual manner.

Changes and variations may be made in the construction shown and described without departing from the principles of the invention or sacrificing its chief advantages; hence such invention is not to be confined to the structures shown in the accompanying drawing; in which,

Figure 1 is a view in sectional elevation of a fountain pen constructed in accordance with my invention.

Figure 2 is an enlarged section taken on the line 2—2 of Figure 1 showing the method of rotatably mounting the sack operating stem.

Figure 3 is an enlarged section taken on the line 3—3 of Figure 1 and shows the connection of the sack bottom nipple with the sack.

Figure 4 is an enlarged section taken on the line 4—4 of Figure 1 and shows the position of the vent holes in the air tube and in the tip piece.

Referring to the drawing in detail, 5 indicates the tubular barrel which is preferably made from celluloid or hard rubber and into one end of which is force fitted, the barrel end piece 6, the outer diameter of which coincides with the diameter of the pen barrel 5. The end piece 6 is shouldered as at 7 and is provided with an inwardly extending sleeve 8 which fits into one end of the barrel 5. This fit may be forced or the parts may be cemented together to provide a leakproof joint. The lower end of the barrel piece is arranged to receive in the threaded end 9 of the chamber 10 therein, the extended threaded portion 11 of the tip 12. This tip is provided with a bore or chamber 13 extending inwardly from one end and in the bore there is positioned the usual feeder piece 14 and writing pen 15. The feeder is provided with a longitudinal slot 16 through which the ink is fed to the pen 15. It is necessary that the inside of the barrel of the pen be ventilated so that intake of ink may be accomplished at the same time providing means for exhaust of the air pocketed in the barrel and to this end I have provided an ink passage 17 in the tip 12 which connects the barrel chamber 10 with the tip chamber 13. The tip is also provided with an air tube 18 positioned in a suitable bore in the upper end of the tip by being force fitted therein or otherwise secured in position. The air tube 18 is provided with a small vent 19—A adjacent the upper end of the tip.

The air tube 18 extends upwardly any desired distance but preferably to a point immediately below the top edge of the inwardly disposed sleeve 8 of the barrel end piece 6. The upper end of the end piece 6 provides a shoulder 19 upon which rests the flanged portion 20 of a celluloid sack bottom nipple 21 which is flared at its upper end so that the end of the sack 22 has to be snapped thereover. The flange 20 of the nipple 21 is securely cemented to the upper end 19 of the barrel piece 6 with the result that the sack is securely held at its lower end and prevented from revolving. The sack at its upper end is closed through the medium of a similar sack top nipple 23 whose flange 24 is secured in any suitable manner to the stud 25 which extends up

through the bore 26 in the sleeve 27. The sleeve 27 is threaded as at 28 in the interior upper end of the barrel 5 and is further provided with an extended portion 29, the outer periphery of which is threaded as at 30 to receive the threaded end of a cover 31 whose diameter conforms to the diameter of the barrel 5.

The stud 25 is arranged to have free rotation in the sleeve 27 and in order to revolve it and with it, the sack 22 to provide the latter with the proper twist necessary to empty the contents thereof and draw in a fresh supply of ink into the pen barrel, use is made of a finger nut 32 which is threaded as at 33—A to the upper end of the stud 25 and in position to retain over a square portion 33 of the stud, a collar 34 having a square opening 35 therein. This square opening 35 fits over the squared portion 33 of the stud 25 and a revolving movement of the stud 25 revolves the collar 34 and its projection or tongue 36 is limited in its movement through the medium of a pin 37 secured in the upper end of the sleeve 27. The rubber sack 22 when twisted, will act like a spring and when free, will normally maintain the extension 36 of the collar 34 against the pin 37. When the stud 25, however, is rotated, it will twist the sack and effectively force out the ink in the barrel and when again released will draw in the ink in several successive operations to fill not only the barrel chamber 10 but the interior of the sack with the result that the pen has a greater capacity than has heretofore been provided and the sack is limited in its twisting movement so that it cannot be unduly distorted during the filling or ejecting of the ink from the barrel.

As illustrated in Figure 2, the dotted line position of the finger or tongue 36 shows the limit of the travel of the stud 25 in its revolving movement and when it is in the position shown in outline and the finger nut 32 is released, the sack, being under tension will tend to straighten itself out and will suck in the ink until the tongue 36 comes into contact with the opposite side of the pin 37 as shown in full lines in Figure 2.

The tight fit of the rubber sack to each of the nipples at its opposite ends, the top nipple 23 being closed completely by the solid flange 24, effectively positions the sack between the barrel end piece and the sleeve 27 and when it is filled with ink, the inside area of the barrel is effectively employed for the storage of ink thereby giving to my construction a greater ink capacity than in pens employing levers for operating the sack by the usual squeezing mechanism which must be positioned within the barrel and consequently takes up space that might otherwise be used for ink storage.

My invention is not to be restricted to the precise details of construction shown since various changes and modifications may be made therein without departing from the scope of the invention or sacrificing the advantages derived from its use.

What I claim is:—

1. In a fountain pen, a barrel having an internal annular shoulder, a rubber sack, relatively hard upper and lower end pieces having flared portions over which the ends of the sack are snapped, said lower end piece having an opening therein and being secured to said shoulder, an end piece for the barrel, an air vent tube in said piece extending substantially to said lower end piece, a sack twisting stud secured to said upper end piece, a sleeve through which the stud extends, a pin on the sleeve, a tongue on the stud for engaging said pin to limit the sack twisting movement of said stud, and a cover for the end of the stud detachably secured to said sleeve.

2. In a fountain pen, a barrel, having an internal annular shoulder, a rubber sack, relatively hard upper and lower end pieces in the sack, having flared portions over which the ends of the sack are snapped, the lower end piece being secured to said shoulder, an end member for the barrel, an air vent tube in said member extending through an ink chamber formed in said member and substantially to said lower end piece, a sack twisting stud secured to said upper end piece, a sleeve through which the stud extends, a pin on the sleeve, a tongue on the stud for engaging said pin to limit the sack twisting movement of said stud, a finger piece on the stud, and a cover for said finger piece detachably secured to the sleeve and constituting an end for the barrel.

In testimony whereof I affix my signature.

ABRAHAM SCHLOSSER. [L. S.]