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FOUNTAIN PEN

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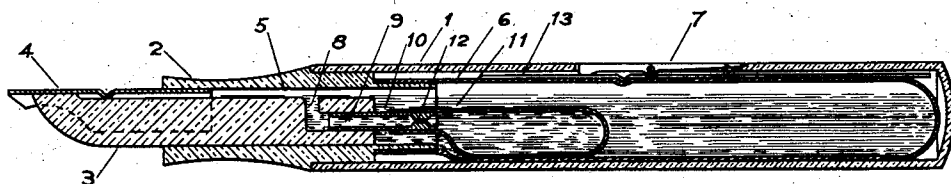


FIG 1

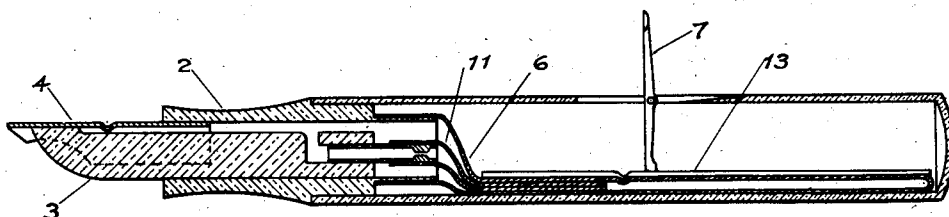


FIG 2

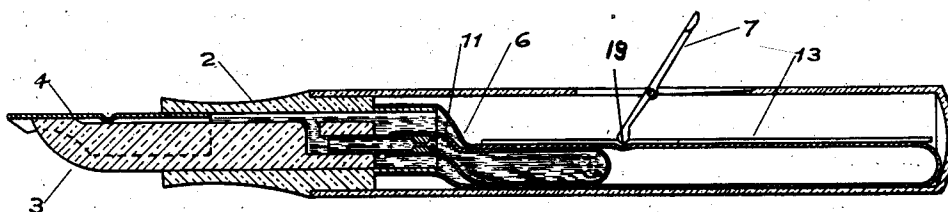


FIG 3

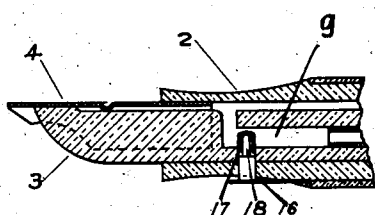


FIG 4

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FOUNTAIN PEN

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The present invention relates to fountain pens, and in particular to fountain pens in which the ink is stored in the pen by suction though the invention itself is applicable to all types of fountain pens.

It is commonly known in the prior art, that many types of fountain pens begin to flow freely when the pen commences to run dry, but usually when this happens, the pen is almost dry and will thereafter write only a few lines before it needs refilling. Again, it is usual that pens when they begin to flow freely are apt to blot or flow so freely that good writing is more difficult. In fact manufacturers have ceased to consider the free flowing of a fountain pen when it is about to run dry, as a desirable quality, and have directed their endeavors to overcome this feature in most cases.

The sudden cessation of flow of ink or writing fluid in a pen, often causes great inconvenience. If no ink is immediately available, or if the writer has no time to fill the pen, he may be seriously inconvenienced, and be unable to continue writing. It is quite customary for people desiring to avoid this difficulty to be provided with two pens, and when one is dry, they use the other.

This, however, demands that the writer has two pens available and also might be objectionable on account of the delay in putting one away and taking the other one out.

In the present invention, I avoid these difficulties by providing means within the pen, whereby, when the ink stops flowing, I still have available supply of ink sufficient to continue writing for some time, and by proper operation, this ink or fluid flows when the pen is used.

A form of the present invention is described below in connection with the drawing, in which:

Figure 1 is a section through the fountain pen.

Figure 2 shows the pen emptied and about to be filled.

Figure 3 shows the pen in the position where the auxiliary reservoir is being emptied, and

Figure 4 shows a modification.

The fountain pen shown in the drawing comprises a casing consisting of the shell 1 in which the ink reservoir sets, and a pen section sleeve 2, over the end of which the shell 1 fits.

The pen section sleeve 2 has the feeder 3 wedged in it. This feeder helps to hold the nib 4 in position and in the pen. Between the pen section sleeve 2 and the feeder 3 is a passage 5, which connects with the neck of the bulb 6 and through which the ink is drawn into the bulb or reservoir 6, when the pen is filled by first raising the lever 7 and then placing it in its normal position.

In the feeder 3, is cut another passage 8 by drilling in the channel 5, perpendicular thereto and still another passage 9 by drilling in from the inner end of the feeder 3. The two passages 8 and 9 connect with one another and have their outlet through a tube 10 into the smaller bulb 11.

The tube 10 may be hard, or it may be flexible. If hard, it preferably has a constriction 12, so that the ink or fluid when it has once been drawn into the bulb 11, will not flow out.

When the lever 7 is vertical as shown in Figure 2, the plate 13 collapses both bulbs 6 and 11, and drives the ink or writing fluid out of both if there is any ink therein. When the lever is put back in its normal position, the bulbs begin to expand and the ink is sucked into them.

In writing, then, with a full pen, the ink is first used from the large reservoir 6, since this ink flows out in writing. The ink from the reservoir 11, however, does not flow out, but remains therein, even though the large reservoir is dry. When this occurs, the writer raises the lever 7, and forces the ink in the small reservoir 11 into the passages 8, 9, 5, and the neck of the bulb 6, which is not collapsed, by raising the lever 7.

As shown in Figure 3, the lever 7 is not completely depressed, but to the point where it springs into the depression 19 in the plate 13, which action makes an audible click, and sends some of the writing fluid out of the auxiliary reservoir into the passages for use. The lever 7, need not be depressed completely,

but may be depressed until the click is heard. In fact this may be done a number of times each time, sending some writing fluid into the passages for use and at the same time insuring the possibility of the ink not flowing from the nib, while it is being done.

The size of the reservoir 11 is so designed that when the ink is driven out by raising the lever 7, no ink will flow from the pen by being forced out, since the reservoir 11 has no greater volume of ink than that which will occupy the spaces within the pen outside of the capillary openings of the bulb 11. That is to say the ink in the bulb 11, will be forced out of the bulb 11, when the lever 7 is pressed, but the space in which it is forced will be large enough to hold it so that no ink will be forced from the pen itself.

The small bulb 11 is as shown, smaller than the large bulb 6, and is preferably within it, although it may be outside, and feed the nib of the pen through a common connecting passage.

When the bulb 11 is placed within the bulb 6, it is necessary to see that the bulb 11 will completely expand, and not be held collapsed by the ink flowing into the bulb 6. To insure this, the expansion force of the bulb 11 is sufficiently strong to accomplish this.

When the writer notes that his pen is running dry, he simply raises the lever 7, and forces the ink in the bulb 11, out into the passages as explained above where it is fed to the pen. The lever 7, may be returned and the pen may be used in the ordinary fashion.

To remember that the pen needs filling, an indicator may be employed which may be covered or uncovered to show whether there is need of filling the pen. This is shown in the modification of Figure 4, where a hold is drilled in the pen section sleeve 2 on the lower side and the pin 18 is inserted. This pin presses the small diaphragm 17 inwards to make a capillary opening, so that the ink will not flow out. When it is desired to use the ink in the auxiliary reservoir, the pin is pulled down by pulling the lever 16 to which the pin is fastened. The pin is held in place by the lever 16, which is riveted or pinned to the pen section sleeve 2. The pin in its open position will be noticeable and give the writer a reminder that the auxiliary supply is being exhausted.

Having now described my invention, I claim:—

1. A fountain pen having a main and auxiliary reservoir for supplying the ink when the main reservoir is depleted, a bar member extending longitudinally over the main reservoir, a lever adapted to depress said bar, said bar having a depression into which the end of said lever falls when the main and auxiliary reservoirs are partly compressed producing an audible click.

2. A fountain pen comprising a casing, a

pen sleeve section fitting in the open end of the casing, said pen section having an inwardly extending flange, a sac for holding the ink fitting over the flange and extending substantially the length of the casing, a pen feeder fitting in said sleeve, said feeder forming with said sleeve a passage to said sac, a second fixed passage formed in said feeder communicating with the first passage, a collar projecting from the end of the feeder through which the second passage extends, a sac positioned over the collar, said passage having a permanent constriction and means operated external of the casing for compressing the sacs simultaneously to fill the same.

3. A fountain pen comprising a casing, a pen sleeve section fitting in the open end of the casing, said pen section having an inwardly extending flange, a sac for holding the ink fitting over the flange and extending substantially the length of the casing, a pen feeder fitting in said sleeve and having a groove forming a feeding passage extending longitudinally of the feeder to the sac, a second fixed passage positioned in the center of said feeder communicating to the first passage, a collar extending from said feeder and extending to the second passage, a small sac positioned over the collar, said passage having a permanent constriction and a bar lever pivoted in said casing for filling said sacs simultaneously.

4. A fountain pen comprising a casing, a pen sleeve section fitting in the open end of the casing, said pen section having an inwardly extending flange, a sac for holding the ink fitting over the flange and extending substantially the length of the casing, a pen feeder fitting in said sleeve, said feeder forming with said sleeve a passage to said sac, a second fixed passage formed in said feeder communicating with the first passage, a sac, means for mounting the sac over the end of the second passage, means forming a permanent constriction in said second passage and means operated external of the casing for compressing the sacs simultaneously to fill the same.

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