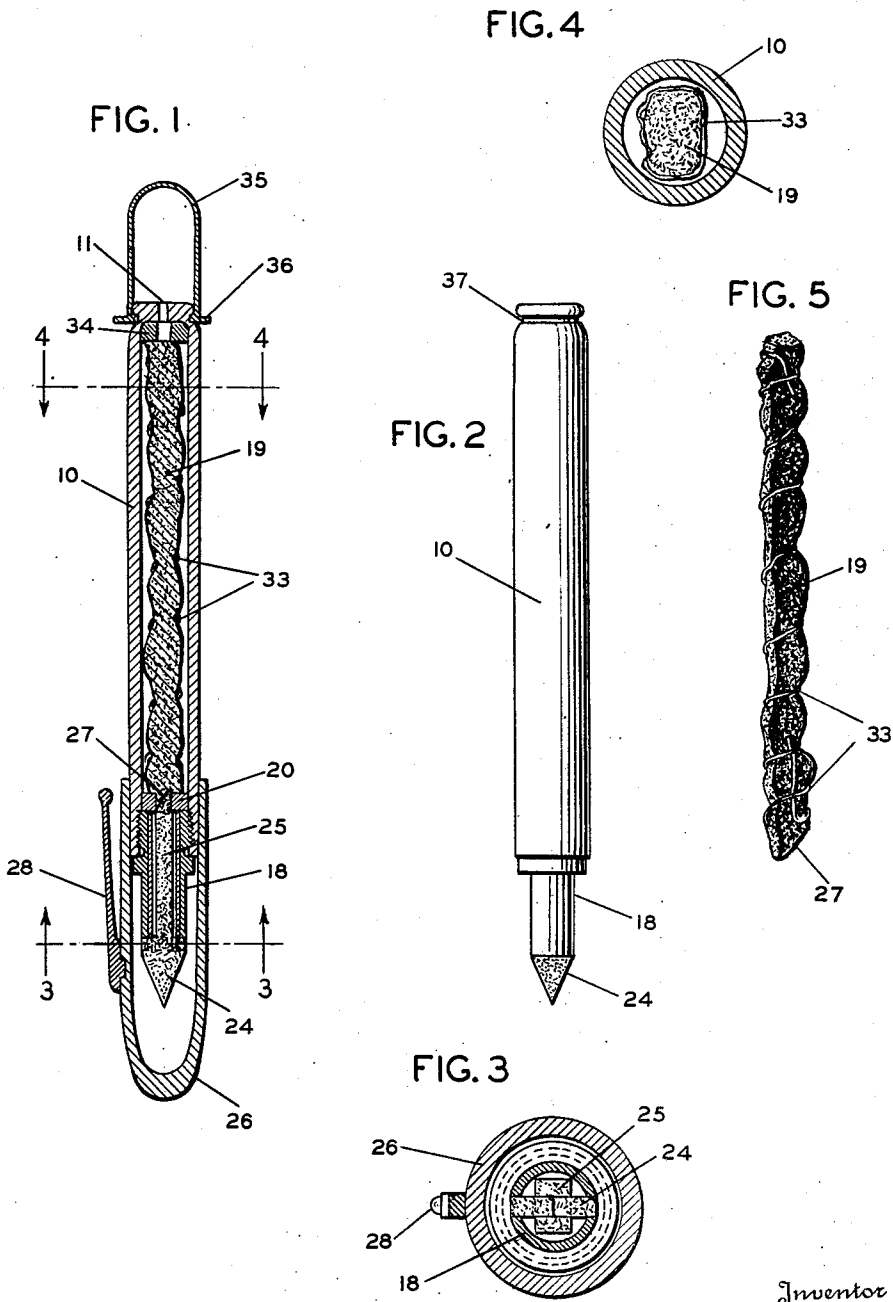


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FOUNTAIN PEN WITH FILLING CAP

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FOUNTAIN PEN WITH FILLING CAP

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My invention relates to fountain pens of the type utilizing a piece of felt or other absorbent material as a nib, and is an improvement on the pen disclosed in the patent of Sidney N. Rosenthal, No. 2,416,596, filed February 4, 1944, for a fountain pen. Pens of this type are particularly useful for making broad lines as in printing or writing upon placards, signs, and packing cases, and for addressing packages for mailing, and for general shipping and stockroom use.

Such pens have an ink reservoir in the barrel partly filled with an absorbent material from which ink is fed to the nib or brush by capillary action, the inner end of the nib or brush sticking into the barrel far enough to contact the outer end of the filling, and this invention aims to provide convenient means for retaining the ink and for refilling the barrel with ink.

Other aims and objects of the invention are to prevent leakage of the ink from the barrel through the nib due to changes in temperature and barometric pressure or other causes, and to maintain a satisfactory flow of ink from the reservoir to the nib of the pen.

The invention comprises the improved pen barrel and filling bulb or cap, and the novel pad of ink absorbent material for use therewith, both singly and in combination with each other.

Further objects and advantages of the invention will appear in connection with the following description of a preferred embodiment thereof shown in the accompanying drawings, wherein:

Fig. 1 is a longitudinal axial cross-section of a pen provided with the usual cap on one end and a rubber filling sac or cap on the other end;

Fig. 2 is a side elevation of the same with the cap and rubber filling sac removed;

Fig. 3 is a cross-section of the nib end of the pen, taken on the line 3-3 in Fig. 1, the end of the nib being shown in elevation;

Fig. 4 is a cross-section of the barrel end of the pen with the cap removed on the line 4-4 in Fig. 1; and

Fig. 5 is a side view in perspective of the pad of ink absorbent filling material removed from the barrel.

The same reference characters are used to represent the same parts throughout the several views.

The pen illustrated in the drawings comprises a barrel 10 preferably made of hard rubber, hard plastic material, or metal such as aluminum or other light metal or alloy. The barrel is closed at one end except for a small orifice 11, and is open at the other end to receive the nib holder

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18, being provided with internal screw threads cooperating with external threads on the inner end of the nib-holder in order to hold the latter securely in place. The barrel is packed with absorbent filling material 19 secured by a felt washer 20 and maintained in contact with the inner end of the writing nib as hereinafter described.

A nib 24 of felt or other suitable ink absorbent material preferably having a pointed outer or writing end and a square stem 25, extends through the nib holder 18 with its inner end in contact with the washer 20 and end of the packing material 19, as shown in Fig. 1. The packing material is compacted into pad form and preferably the adjacent ends of the nib and ink pad are bevelled as at 27 to project through the hole in the washer 20 into intimate contact with each other so as to provide an easy and certain path for ink to flow by capillary action from the absorbent pad to the point of the nib.

A removable cap 26 is provided for covering the point of the nib when the pen is not in use. This may be fitted with the usual pocket clip 28 for securing the pen in the pocket of the user.

The absorbent cotton, felt or other ink retaining material composing the ink pad 19 preferably is compacted in a square or rectangular strip and held in shape by a fine wire 33 wrapped around it from end to end, thereby constituting a somewhat springy length of absorbent material which only partly fills the barrel, there being space between it and the barrel for its entire length. It is squeezed between the washer 20 and a similar washer 34 at the closed end of the barrel so that it is under slight compression, the wire wrapping tending to cause it to straighten out and expand lengthwise. The washer 34 is provided with a central hole registering with the hole 11 in the closed end of the barrel, and is slightly larger than the inside of the barrel so as to fit snugly within it. Its affinity for ink is such as to prevent leakage of small amounts of surplus ink through the orifice 11.

The closed end of the barrel is fitted with a soft rubber compressible cap or filling bulb 35 which has a bead 36 around its open mouth for engaging in the groove 37 surrounding the barrel at its closed end. This cap may remain in place on the barrel at all times, but preferably it will be removed between use for filling the barrel with ink as desired. By dipping the nib end of the pen in liquid ink of the proper fluidity and squeezing the bulb 35 to expel air from the barrel, upon releasing the bulb some ink will be drawn into

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the barrel, where it will be absorbed and retained by the filling material. The size of the bulb is too small to permit overfilling the reservoir space not occupied by the pad 19, and the ink thus drawn into the barrel is quickly absorbed and retained by the material composing the pad.

The viscosity of the ink and the relative sizes of the nib and pad and absorptive property of the latter, and the amount of free space in the pen barrel and nib holder, are such as to permit quick filling of the reservoir by suction and ready flow of the ink therefrom through the nib by capillary action. The arrangement of the absorptive material and washers is such as to prevent leakage of ink through either end of the barrel.

The invention is not restricted to the preferred form of device illustrated but what is claimed is as follows.

I claim:

1. A fountain pen comprising a barrel forming an ink reservoir open at one end and provided with a small aperture at the other end which is otherwise closed, a nib holder having a bore attached to and communicating with the open end of said reservoir, a nib of absorbent material secured in said bore, said nib having a projecting inner end and the outer end of said nib projecting beyond the outer end of said holder, absorbent means substantially filling said reservoir and having its outer end in proximity to the inner end of said nib, said nib and absorbent filling being shaped to make contact at an angle whereby capillary contact is maintained and excessive compression of the absorbent means is avoided, in combination with a soft resilient rubber cap having a neck portion embracing said closed end adapted to be compressed to expel air from said barrel and to draw in ink through said nib end when released, said cap being stretchable for attachment to and removable from the outer end of said barrel.

2. A fountain pen comprising a barrel forming an ink reservoir open at one end and provided with a small aperture at the other end which is otherwise closed, a nib holder having a bore attached to and communicating with the open end of said reservoir, a nib of absorbent material secured in said bore, said nib having a projecting inner end and the outer end of said nib projecting beyond the outer end of said holder, absorbent means substantially filling said reservoir and having its outer end in proximity to the inner end of said nib, said nib and absorbent filling being shaped to make contact at an angle whereby capillary contact is maintained and excessive compression of the absorbent means is avoided, in combination with a soft resilient rubber cap having a neck portion embracing said closed end adapted to be compressed to expel

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air from said barrel and to draw in ink through said nib end when released.

3. A fountain pen comprising a barrel forming an ink reservoir open at one end and provided with a small aperture at the other end which is otherwise closed, a nib holder having a bore attached to and communicating with the open end of said reservoir, a nib of absorbent material secured in said bore, said nib having a projecting inner end and the outer end of said nib projecting beyond the outer end of said holder, expansible absorbent means substantially filling said reservoir and having its outer end in contact with the inner end of said nib, said expansible absorbent means pressing against said nib whereby capillary contact is maintained, in combination with a soft resilient rubber cap having a neck portion embracing said closed end adapted to be compressed to expel air from said barrel and to draw in ink through said nib end when released.

4. A fountain pen comprising a barrel forming an ink reservoir open at one end and provided with a small aperture at the other end which is otherwise closed, a nib holder having a bore attached to and communicating with the open end of said reservoir, a nib of absorbent material secured in said bore, said nib having a projecting inner end and the outer end of said nib projecting beyond the outer end of said holder, absorbent means under slight compression substantially filling said reservoir and having its outer end in contact with the inner end of said nib whereby capillary contact is maintained, in combination with a soft resilient rubber cap having a neck portion embracing said closed end adapted to be compressed to expel air from said barrel and to draw in ink through said nib end when released, said cap being stretchable for attachment to and removal from the outer end of said barrel.

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