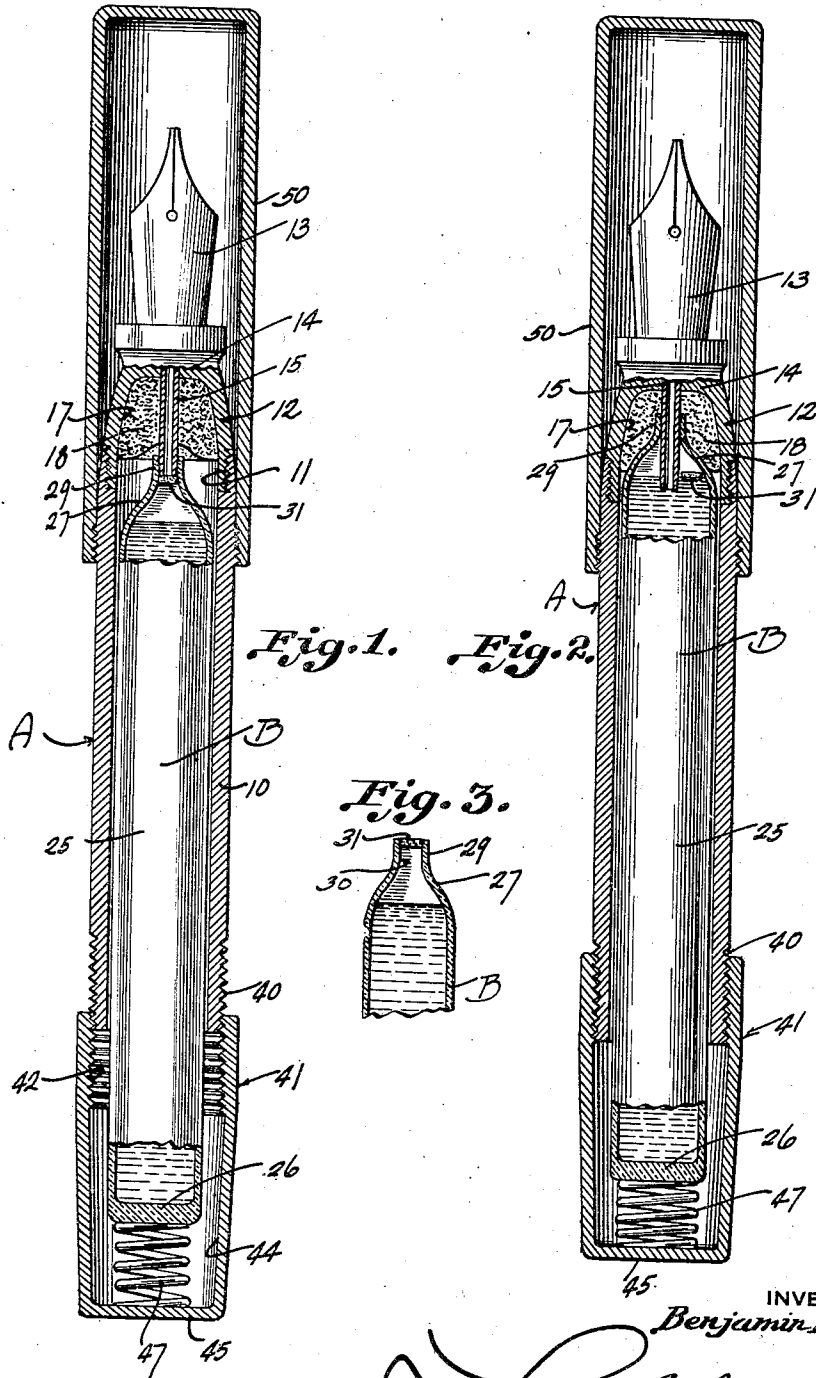


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B. R. BELL
FOUNTAIN PEN
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FOUNTAIN PEN

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This invention relates to improvements in fountain pens.

The primary object of this invention is the provision of a relatively simple and economical fountain pen construction having improved means associated therewith for receiving a detachable cartridge or reservoir, which may be renewed from time to time upon desire to refill the pen.

Other objects and advantages of this invention will be apparent during the course of the following detailed description.

In the accompanying drawings, forming a part of this specification, and wherein similar reference characters designate corresponding parts throughout the several views.

Figure 1 is a vertical sectional view taken longitudinally through the improved pen, showing the relation of parts as a new reservoir or cartridge is being assembled upon the pen.

Figure 2 is a vertical sectional view of the pen parts after the cartridge has been assembled upon the pen, and is ready for distribution of its ink to the pen point.

Figure 3 is a fragmentary sectional view showing the outer stopper end of the cartridge.

In the drawings, wherein is shown only a preferred embodiment of the invention, the letter A may generally designate the improved pen, which consists of a barrel body 10, of any approved material of which fountain pen casings are made; the same being cylindrical in form and at its upper end preferably internally screw threaded at 11, for detachably receiving a pen holding part 12 whereon a removable pen point 13 may be associated, together with the usual distributor (not shown). The end wall 14 of the part 12 has a conduit or tubular plunger 15 extending therethrough into the hollowed end of the holder part 12, extending for considerable length into this hollow or compartment, designated at 17 in the drawings. In the compartment or socket 17 surrounding the plunger 15 is disposed some soft pliable material, such as soft rubber, preferably of a nature which will act as a gasket. The outer or lower free end of the tube 15 projects be-

yond the material 18 for a cooperative opening of the replaceable cartridge B, in a manner to be subsequently mentioned.

The cartridge B is preferably of glass, although it may be of metal, celluloid, hard rubber, or any improved material. It is preferably of about the same size as an ordinary rubber casing for a refillable type of conventional fountain pen. It is of course inherently rigid and comprises a cylindrical body 25 having a preferably flat bottom wall 26. At its opposite end it has a tapered neck 27 terminating in a restricted end 29 having a mouth 30, wherein a removable relatively shallow stopper 31 is disposed. The stopper 31 may be of cork or any other approved material, and of a nature which will permit the same to be entirely pushed through the mouth 30 into the tapered neck portion of the reservoir cartridge and thence into the cartridge. If desired, the stopper may be of puncturable material.

As for the application of the cartridge B, the same is slipped into the body 10 of the barrel of the fountain pen, with the tapered neck foremost, and due to the centered relation which it occupies in the barrel body 10, preferably quite snugly fitting therein so that there is very little play, except to permit the sliding of the same along the barrel, the cork or stopper 31 comes into axial alignment with the plunger 15; the latter centering against the stopper 31 and upon pressure at the outer end of the cartridge B, the stopper will be forced by the plunger into the cartridge B, as shown in an initial step in Figure 1, and will ultimately fall into the cartridge to a position where the same will not obstruct the open end of the plunger 15, as shown in Figure 2.

As a preferred means of enabling the facile attachment and detachment of the renewable cartridge, it is preferred to externally screw thread the lower outer end of the barrel body 10, as shown at 40, and complementary therewith is an internally screw threaded cap 41, having a screw threaded socket 42 for seating on the screw threaded end 40. The socket opening 44 in the cap 41 terminates in a dead lower end at the wall 45, 100

and within the same upon the wall 45 is seated a spiral compression spring 47, which is compressed against the cartridge B, as the cap 41 screw threads in place upon the body 10, from the position shown in Figure 1, to the position shown in Figure 2, for the purpose of forcing the cartridge B in a piston-like action against the plunger 15, in order that the stopper 31 will be moved into the cartridge and permit the ink to flow through the passageway of the tube 15 and onto the distributor and pen point.

It is to be particularly noted that when the cartridge B is firmly seated in place upon the barrel, the tapered neck end thereof has been forced by the compressed spring 47 into the yieldable gasket material 17, forming a leak-proof connection therewith, preventing leakage of ink into the barrel and along the tube 15, since it is noted that when fully seated the extreme edge of the end 29 of the cartridge lies spaced from the wall 14, and which space is filled by the packing material 18 surrounding the tube 15 in a leak-proof

contact.

Various changes in the shape, size, and arrangement of parts may be made to the form of invention herein shown and described, without departing from the spirit of the invention or the scope of the claim.

I claim:

In a fountain pen of the class described a barrel including a pen point holding structure having a feed tube extending freely into the barrel for a substantial distance, and a removable cartridge for the barrel including a tapered neck with a restricted mouth into which the feed tube may snugly fit and a removable stopper in said mouth, the cartridge when fully inserted in the barrel with the feed tube therein having a space between the feed tube at its free end and the lateral walls of the cartridge which is greater measured in any radial direction than the diameter of the mouth of said cartridge, whereby the stopper when pushed into the cartridge during the assemblage of the latter into the barrel and on the feed tube will lie laterally of the tube after assemblage of parts to prevent obstruction of flow of ink into the feed tube.

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