

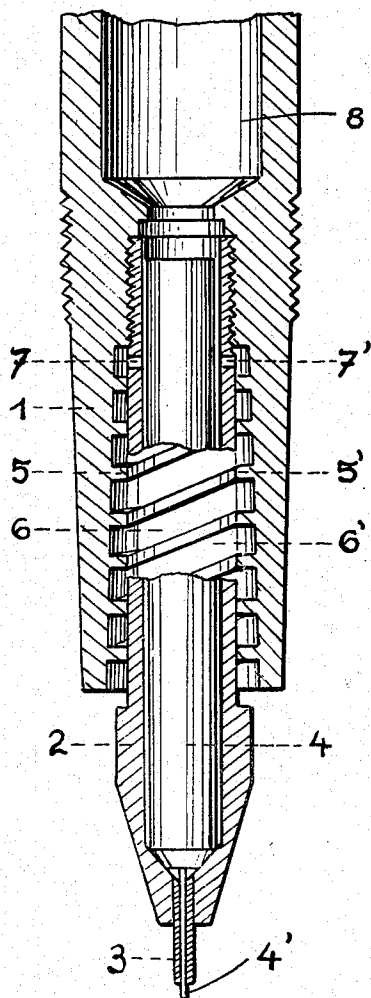
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FOUNTAIN PEN

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# UNITED STATES PATENT OFFICE

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## FOUNTAIN PEN

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3 Claims. (Cl. 120—50)

This invention relates to a fountain pen provided with an annular compensation chamber arranged in the bore of the neck portion of the pen. In the prior art this chamber has usually been provided by a body inserted into the bore of the neck portion, which body has a diameter about 1 mm. less than the diameter of the bore so that an annular chamber is provided between the inner wall of the neck portion and the outer surface of the body, which chamber extends to the lower end of the neck portion where it is open to the atmosphere, and communicates at its upper end with the ink receptacle of the pen.

The object of the present invention is to provide a structure in which this compensation chamber becomes uniformly filled, and to prevent accidental escape of the ink from the pen. These desirable results are secured by sub-dividing the compensation chamber by a pair of helical ribs to form a pair of helical channels connected at their upper ends with the ink receptacle and having their lower ends open to the atmosphere. The ribs may be provided on the inner wall of the inserted body, or they may be formed independently of both the neck portion and the body, and inserted therebetween. Providing these ribs on the inner wall of the neck portion, as shown in the accompanying drawing, is the preferred arrangement, since in this manner any communication between the two channels is most effectively prevented.

A pen embodying the invention is shown in the accompanying drawing which is a vertical section of the lower part of a fountain pen.

As illustrated in the drawing, there is a neck portion 1 having a bore in which is snugly fitted a hollow body 2 having a writing tube 3 at its outer end which projects from the neck portion 1. In the body 2 there is a plunger 4 having on its outer end a cleaning needle 4' in the writing tube 3. The inner wall of the neck portion 1 is provided with two narrow helical ribs 5, 5' which closely surround the body 2 and divide the compensation chamber between the portion 1 and the body 2 into two helical channels 6, 6' which communicate at their inner ends with the interior of the body 2 through orifices 7, 7', respectively, which thereby connect these channels 6, 6' with the ink receptacle 8 of the pen, through the hollow body 2. The outer ends of the channels 6, 6' open to the atmosphere, and increase in depth from their inner ends to their outward ends.

Ink escaping from the ink receptacle 8 through the orifices 7, 7' flows into channels 6, 6', and is

uniformly conducted away from these channels, during use of the pen. The ribs 5, 5' prevent the ink from escaping from the compensation chamber.

5 What is claimed is:

1. In a fountain pen, the combination of a body provided with an ink receptacle; a tubular member removably mounted in said body and having its inner end communicating with said receptacle; two helical ribs of similar pitch spacing the said member from the body to form a pair of helical channels between the body and the member, said channels communicating with the atmosphere at the outer end of the body, said member being provided at diametrically opposite points with a pair of apertures, each of which connects one of said channels with the interior of the member at its inner end; and a writing tube on the outer end of said member and connected with the interior thereof.

2. In a fountain pen, the combination of a body having a longitudinal bore and provided with a plurality of helical ribs in said bore; a tubular member disposed in said bore and forming with said ribs a plurality of channels between said body and said member, said channels communicating with the atmosphere at the outer end of the bore, said member having a plurality of apertures adjacent the inner end of the bore, each of which connects one of said channels with the interior of the tubular member; an ink receptacle in said body and communicating with the inner end of the said member; and a writing tube on the outer end of the member and connected with the interior thereof.

3. In a fountain pen, the combination of a body provided with an ink receptacle, and having a longitudinal bore extending from one end of the body to and connected with the receptacle; a plurality of helical ribs on the body in said bore producing a plurality of helical channels, said channels communicating with the atmosphere at the outer end of the bore; a tubular member inserted in said body in snug engagement with the outer edges of said ribs, and removably connected at the inner end of said member with said body, its said inner end communicating with said ink receptacle, and being provided with a plurality of orifices, each of said orifices connecting the interior of the tubular member with one of said helical channels at the end of the channel toward the inner end of the bore; and a writing tube on the outer end of said tubular member and connected with the interior of said member.

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