June 21, 1932. H. A. MYERS 1,864,050

FOUNTAIN PEN

Filed Oct. 27, 1930

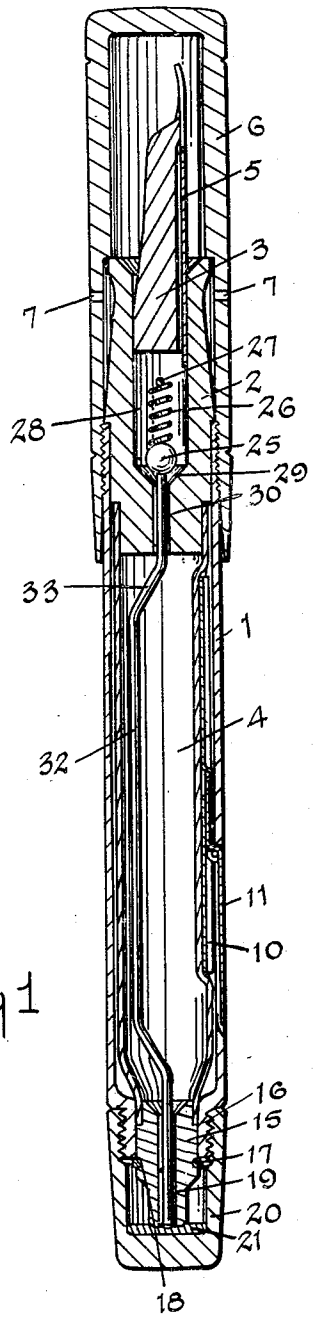


Fig 1

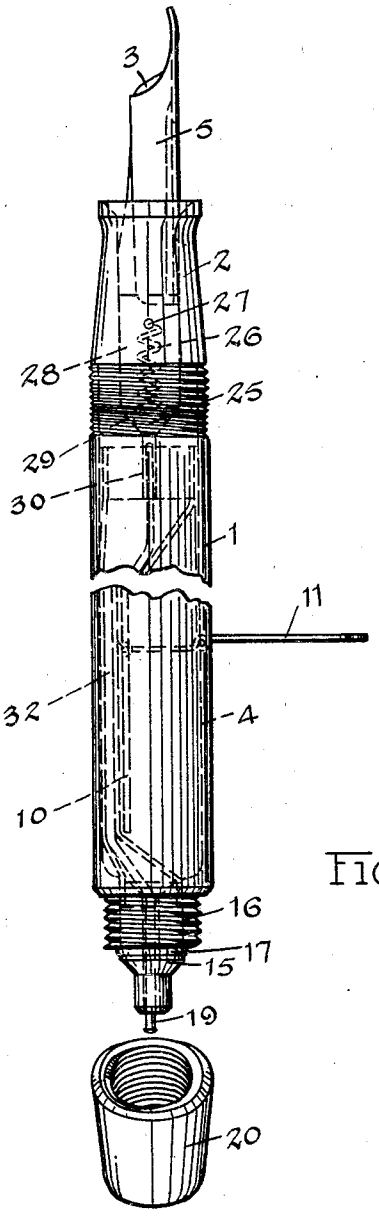


Fig 2

Inventor

Hubert A. Myers

By Faust F. Crampton

Attorney

Patented June 21, 1932 1,864,050

UNITED STATES PATENT OFFICE

HUBERT A. MYERS, OF TOLEDO, OHIO

FOUNTAIN PEN

Application filed October 27, 1930. Serial No. 491,332.

My invention relates to an efficient means for filling fountain pens whereby the objectionable, and often obnoxious, covering of the finger-grip end of the shell with ink is avoided, and also whereby ink may be drawn and the pen may be charged with the ink from a container, when the level of the ink is very low in the container.

In the preferred form of the invention, the fountain pen is provided with an elastic bag whose outer end, that is, the end remote from the pen end of the fountain pen, may be opened and, upon expansion of the bag, the pen may be filled through the said end. A suitable cap or plug or cover is provided for covering the outer end of the bag, whereby all exposed ink-smeared surfaces are entirely enclosed while the pen is in use.

The invention consists in other features and advantages which will appear from the following description and upon examination of the drawing. Fountain pens containing the invention may partake of different forms and may be varied in their details and still embody the invention. To illustrate a practical application of the invention, I have selected a fountain pen embodying the invention as an example of the various pens, and details thereof, that contain the invention and shall describe the selected pen hereinafter, it being understood that variations may be made and that certain features of my invention may be used to advantange without the corresponding use of the other features, without departing from the spirit of the invention. The particular pen selected is shown in the accompanying drawing.

Fig. 1 illustrates a view of a longitudinal section of the fountain pen referred to. Fig. 2 illustrates a side view of the pen, a part of the pen being shown as broken away.

In the particular form of fountain pen shown in the drawing, the fountain pen is provided with the usual shell 1, having the pen point holding member 2, and the plug 3, and an elastic ink bag 4, or other ink container, that is connected to the member 2 and located within the shell 1. The pen point 5 is fitted or secured in the member 2 and is covered and enclosed by a cap 6 having the breather holes 7. The pen point 5 forms a surface of a passageway that communicates with the interior of the bag 4 through which ink may be drawn into the bag 4 and may be allowed to be gradually fed to the pen point 5, in the manner well known in the art. The movement of the ink into the bag 4, in the filling operation, is brought about by the usual bag depressing means, such as by means of a bar or plate 10 that, when depressed, will force the air from within the resilient bag, and, when released, will permit the bag 4 to expand and draw ink into the bag, in the manner well known in the art. The bar 10 may be depressed by a suitable means, such as the lever 11, that extends through and lies within the wall of the shell and may be operated by the finger in the well known manner.

In the use of the ordinary fountain pen, the pen point must be placed well below the level of the ink in order to draw a material amount of ink into the bag. Consequently, it is necessary that the ink, in the container from which it is to be withdrawn, has considerable depth. It is often found troublesome to maintain the ink in the supply container sufficiently full of ink, in order to properly fill the pen. In order to completely fill the pen, by the elasticity of the bag, after it has been forcibly collapsed by the bar 10, the end of the shell must be inserted within the ink to prevent the entrance of the air between the plug 3 and the pen point 5 into the passageways of the plug 3 and the member 2, and into the bag 4. This requires that the container shall have a depth equal to the length that the pen point 5 protrudes from the member 2 and invariably results in not only ink covering the entire

surface of the pen, and the plug 3, but also results in covering the member 2, or at least a large part of the lower end of it, with the obnoxious results that, when the fountain pen is gripped, the fingers are smeared with ink. To overcome these offensive characteristics of fountain pens, that occur in common use, and which are increasingly disturbing where there is careless or inexpert manipulation of the pen in the filling operation, I have provided an auxiliary or filling passageway or opening into the bag.

In order to eliminate smearing of the pen end of the fountain pen with ink and to enable filling of the pen from containers having ink at a low level, I have provided a means for filling the pen through the end of the shell remote from the pen point and enclosing and covering the exposed parts of the said means with a suitable cap. The pen shown in the drawing is provided with a nipple 15 that may be secured in the end of the shell 1 by any suitable means. In order to easily assemble the bag 4 and the member 2 within the shell 1, the nipple 15 is so formed that it may be moved into the contracted end portion 16 of the shell 1 and secured by a suitable elastic ring 17 that is located in a channel 18 formed in the nipple 15. This will prevent movement of the nipple 15 inwardly into the shell 1. The nipple 15 has a passageway 19 that communicates with the interior of the bag, and the outer end of the bag and nipple is closed by means of a cap 20 that may be threaded onto the reduced end portion 16 of the shell 1. Preferably the bottom of the cap 20 is provided with an elastic disc 21 that will insure sealing of the end of the nipple and closure of the end of the bag 4. The cap 20 may be readily removed from the shell to open the bag.

As is well known, in connection with fountain pens, the passageways between the pen point 5 and the bag 4 are frequently clogged by thickening of the ink and, consequently, ink may be drawn into the bag 4 after the air is forced therefrom by the operation of the bar 10 through the nipple 15. The nipple 15 may be inserted into a container and the open end of the nipple may be placed, if desired, on the bottom of the container and so as to remove substantially all of the ink from the container, provided it does not exceed the capacity of the bag 4. Furthermore, the cap 6 also prevents the movement of a material amount of air into the bag, since it covers the pen.

If desired, the pen point end of the bag 4 may be closed by means of a suitable valve 25. The valve 25 may be a ball check valve, spring pressed by means of the spring 26, located intermediate the ball 25 and the pin 27. The ball 25 is located in the recess 28 which forms a part of the passageway that interconnects the pen point 5, and the bag 4, and is located in the pen holder member 2. The pen holder member is provided with a seat 29 that coacts with the ball 25 to close the passageway 30 and, consequently, to close the pen point end of the bag 4. In order to open the valve 25 and enable the flow of the ink from the bag to the pen point, and also to enable closure of the pen point end of the bag 4, when it is desired to draw ink into the bag 4 through the nipple 15, a wire, or rod, 32 is located within the bag so as to extend through the passageway 30 of the pen point holder member 2, and the passageway 19 of the nipple 15. The length of the wire, or rod, 32, is such that, when the cap 20 is screwed into the end of the shell 1, and the wire 32 is forced inward so that its end lies within the end of the nipple 15, the ball 25 will be raised from its seat 29, substantially as shown in Fig. 1. Preferably, the wire, or rod, 32, is bent at portions 33 located in proximity to the inner ends of the pen holder member 2 and of the nipple 15. This displaces the central portion of the wire, or rod, 32 and also prevents the wire from dropping through the nipple 15 and out of the passageway 30. This also enables the movement of the bar 10 across the shell to the opposite side of the shell during the compression of the bag 4. Thus the pen may be filled with ink through either end of the shell, but, preferably, through the end remote from the finger-grip of the pen, that is, through the nipple 15 which may be closed by the cap 20 to cover any ink smeared surfaces.

I claim:

1. In a fountain pen, a resilient ink bag, means for closing and opening each end of the bag, a member operative by one closing means to operate the other closing means, and a bag depressing means for emptying and filling the bag.

2. In a fountain pen, a pen, an elastic ink bag, one end of the ink bag connected to the pen, a valve member for opening and closing the connection between the pen and the bag, a bag having an auxiliary bag filling opening, a closure member for opening and closing the auxiliary bag, filling opening and an element extending through the bag and engaged by the closure member to operate, the valve member, and a bag depressing means for emptying and filling the bag.

3. In a fountain pen, a pen, a shell for supporting the pen, a resilient ink bag located within the shell, the shell having a passageway connecting the interior of the bag to the surface of the pen, a nipple connected to the bag, means for closing the passageway connecting the bag to the pen, means for closing the passagewap of the nipple, a member interconnecting the said closing means for operating the first named closing means when the second named closing means closes and opens the nipple.

4. In a fountain pen, a pen, a shell, a resilient ink bag located within the shell, the shell having a passageway communicating with the surface of the pen for feeding ink to the pen, a nipple connected to the bag and protruding from the shell at the end remote from the pen, a valve member located in the said passageway, a spring for closing the valve member, a cap for closing and covering the nipple, a rod located intermediate the cap and the valve for opening the valve when the cap is closed.

In witness whereof I have hereunto signed my name to this specification.

HUBERT A. MYERS.