

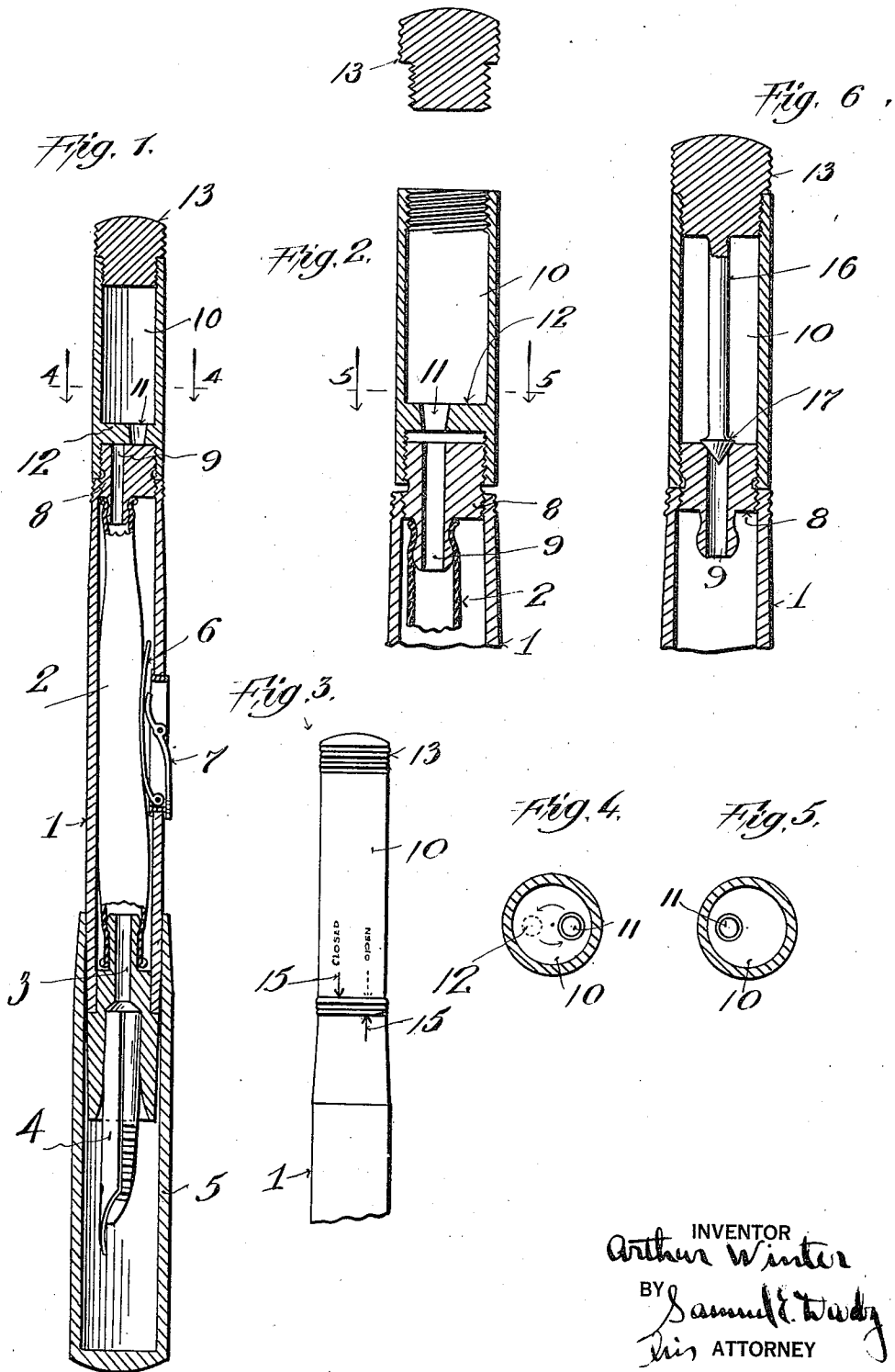
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1,450,398.

A. WINTER.

PEN.

ORIGINAL FILED FEB. 24, 1919.



INVENTOR
Arthur Winter
BY Samuel E. Wady
His ATTORNEY

Patented Apr. 3, 1923.

UNITED STATES PATENT OFFICE.

ARTHUR WINTER, OF JERSEY CITY, NEW JERSEY, ASSIGNOR OF ONE-HALF TO
FRANK H. LA PIERRE.

PEN.

Application filed February 24, 1919, Serial No. 278,562. Renewed February 23, 1923.

To all whom it may concern:

Be it known that I, ARTHUR WINTER, a citizen of the United States, residing at Jersey City, county of Hudson, State of New Jersey, have made a certain new and useful Invention in Pens, of which the following is a specification.

This invention relates to pens, and particularly to the style of pens known as fountain pens.

The object of the invention is to provide a pen, and more particularly a fountain pen, which is simple in structure, efficient in operation and economical of manufacture.

A further object of the invention is to provide a fountain pen which may utilize powdered ink in combination with a water bag or pouch.

A further object of the invention is to provide a pen of the character described wherein the supply of powdered ink to the water bag or pouch may be controlled at will.

Further objects of the invention will appear more fully hereinafter.

The invention consists substantially in the construction, combination, location and relative arrangement of parts, all as will be more fully hereinafter set forth as shown by the accompanying drawing, and finally pointed out in the appended claims.

Referring to the drawing

Fig. 1 is a view in longitudinal section of a pen embodying my invention.

Fig. 2 is a similar view in detail showing the feed valve open.

Fig. 3 is a view in side elevation of the feed portion of the pen.

Fig. 4 is a sectional view taken on the line 4-4 Fig. 1, and looking in the direction of the arrows.

Fig. 5 is a similar view taken on the line 5-5 Fig. 2 looking in the direction of the arrows.

Fig. 6 is a view of a slightly modified construction embodying my invention.

The same part is designated by the same reference character wherever it occurs throughout the several views.

The form of fountain pen known as a self-filling fountain pen has been in extensive use, and is well known and consists substantially in one form of an inflatable bag or pouch carried by the body of the

pen, which, when the pen is to be filled, is pressed in any suitable manner, the pen inserted in a writing fluid, compression on the inflatable bag or pouch removed allowing the writing fluid to be drawn into the bag or pouch through the pen by means of the suction of the bag or pouch.

In accordance with my invention, I utilize a self-filling fountain pen of this nature, but it is expressed object to eliminate the necessity of filling the pen with writing fluid which may not always be available, and to afford means to require only that the bag or pouch be filled with water, and to supply to that water within the bag or pouch a suitable ink, preferably in the form of powder in the desired quantities and at the desired time. It will be seen that with a pen of this nature with a supply of powdered ink, it is only necessary in order to put a dry pen in condition for use, to use the self-filling feature of the pen in the usual manner to fill the bag or pouch with a liquid, such, for example, as water, which may in most instances be found at any place, and particularly at times and places where a writing fluid may not be available. Referring to the drawing, I show a form of fountain pen comprising the body 1, in which is located the bag or pouch 2 secured at one end to the feed 3, which feeds to the pen 4. The usual cap 5 surrounds the pen when the fountain pen is not in use. The bag 2 is compressed by means of a spring 3 bearing thereagainst adapted to be moved upon the actuation of the lever 7, which lever is pivotally secured between its ends to the body 1 of the fountain pen. While for the purposes of illustrating my invention I have shown, and thus far described, a standard form of fountain pen, I wish it to be understood that my invention is not to be limited or restricted to this particular type of fountain pen, as my invention may be equally applied to all types of fountain pens. The top end of the bag 2 is secured to a member 8, which may, if desired, be adapted to be screwed into the body of the pen 1, and is provided with a feed channel 9 extending therethrough, as shown. The feed channel 9 is preferably located at a point off center relative to the longitudinal axis of the member 8. Movably secured to the member 8, for example, screwed thereon, is what I will term the

ink chamber portion of the pen 10, which is provided with a platform 12 at the lower end thereof, adapted to rest on the top end of the member 8, and which platform is provided with a channel 11 fastened there-
 5 through and likewise positioned off center relative to the longitudinal axis of the pen to a degree equal to the degree of offset of the channel 9 of member 8, so that when
 10 the well 10 is moved about its axis, for example, unscrewed from the member 8, a certain distance, the channels 11 and 9 will register with each other, as shown best in Fig. 2. The well 10 is provided at its top
 15 with a stopper 13 adapted to be inserted therein, for example, screwed therein. The portion of the device thus far described is obviously simple. To put the pen in condition for writing, water or other fluid, is
 20 drawn into the bag or pouch 2 in the usual well known manner. The supply of powdered ink, it is assumed, has been put in the well 10 by removing the stopper 13 therefrom. The well 10 is then turned until
 25 the channel members 9 and 11 register with each other, and it is obvious that this affords a passage of the powdered ink through the channel members 11 and 9 into
 30 the pouch 2, the quantity of ink supplied of course being at will; after the ink powder has been allowed to pass into the pouch 2, where it readily dissolves in the liquid contained therein, forming writing fluid in the usual well known manner, the well 10
 35 is screwed back into the position shown in Fig. 1, thus effectively closing the communication between the passages 9 and 11 and preventing the liquid in the pouch 2 from getting into the well 10, if, and when, the pen is inflated from the position shown in
 40 Fig. 1.

It may be desired to have indicated on the exterior of the pen the position of the well 10 relative to the body of the pen,
 45 which, when communication is established between the well and the bag and if desired marks 15 may be provided on the respective parts of the fountain pen, which when registering with each other indicates that communication between the ink well and the water bag is secured. I do not desire to be
 50 limited in any respect to the specific means employed for securing proper supply of ink, as many different methods may be employed, and many suitable valves may be
 55 utilized to control the supply of ink to the bag, for example, in Fig. 6 I show an implied construction, wherein the well 10 may be, if desired, permanently secured to the

member 8, after it has been screwed thereon
 60 and wherein the channel member 9 is located in the axis of the member 8, the platform 12 and channel 11 of the member 10 being eliminated. In this instance, the stopper or plug 13 is provided with a shaft 16
 65 located in the axis thereof, and provided with a valve head 17 adapted to seat in the open end of the channel 9, and to completely close the same when the plug or stopper 13 is in its completely inserted position to allow the ink contained in the chamber 10 to pass through the channel 9 into the bag, the stopper 13 is unscrewed a sufficient distance to withdraw the valve head 17 out of the channel 9. After the ink has been allowed to pass in sufficient quantity through the channel 9 the same is again effectively closed by again screwing the plug or stopper 13 into position as will be readily understood.
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Various other modifications and changes in details will readily occur to those skilled in the art without departing from the spirit and scope of my invention as defined in the claims.
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Therefore, what I claim as new and useful and of my own invention, and desire to secure by Letters Patent is:

1. In a pen, the combination with a fluid bag, a member carried by said pen and provided with an orifice therethrough communicating at one end with said bag, an ink chamber, normally closed to said orifice, and means for admitting ink from said chamber to said orifice.
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2. In a pen, the combination with a fluid bag, of a plug for said pen provided with a duct therethrough communicating at one end with said bag, an ink chamber forming a part of said pen, and means for temporarily establishing communication between said ink chamber and said duct.
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3. In a pen, a fluid chamber, a plug for one end thereof provided with a duct therethrough, an ink chamber closed at one end thereof and rotatably secured to said plug, and provided with a port through the closed end thereof, said port and duct normally out of communication with each other, and so positioned relative to each other, that
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 110 when said ink chamber is rotated, said duct and port register with each other to establish communication between said chambers.

In testimony whereof I have hereunto set my hand on this 22nd day of August A. D.,
 115 1918.

ARTHUR WINTER.