

J. J. MEAD.
 FOUNTAIN PEN.
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1,032,848.

Patented July 16, 1912.

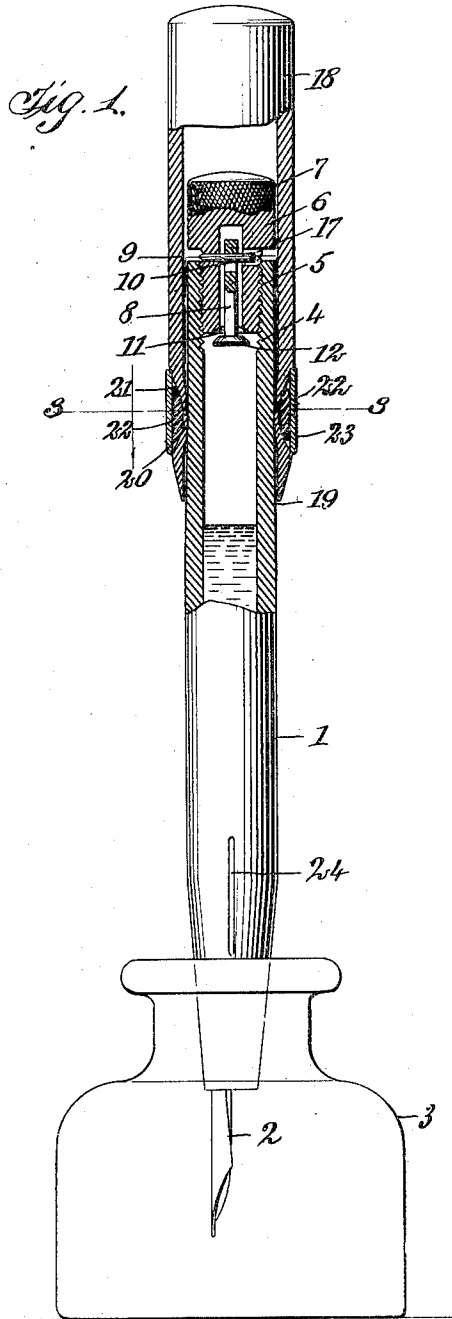


Fig. 2.

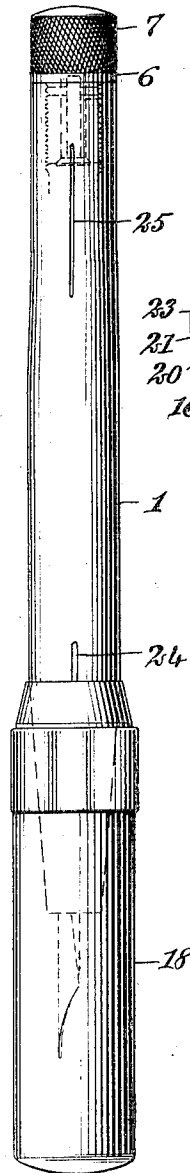


Fig. 3.

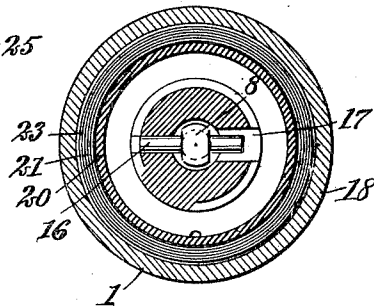
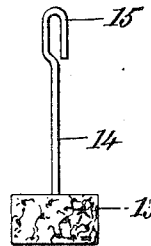


Fig. 4.



WITNESSES

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FOUNTAIN-PEN.

1,032,848.

Specification of Letters Patent.

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Application filed February 27, 1909. Serial No. 480,332.

To all whom it may concern:

Be it known that I, JACOB J. MEAD, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Fountain-Pen, of which the following is a full, clear, and exact description.

This invention relates to fountain pens and is of that type known as "self fillers."

An object of this invention is to form a fountain pen which will be quickly and easily filled without the necessity of removing the pen-point. This and further objects will be more fully described hereinafter and particularly pointed out in the claims.

Reference may be had to the accompanying drawings, in which like reference characters denote corresponding parts in all the views, and in which—

Figure 1 is a vertical cross-section of the device, showing the pen-point in an ink bottle, and the cap in the act of drawing the ink into the pen; Fig. 2 is a view of the pen, showing the cap over the pen-point, and the end-piece closed on its seat; Fig. 3 is a transverse cross-section on the line 3—3 of Fig. 1; and Fig. 4 shows a modified form of float-valve.

Referring more particularly to the separate parts of the device, 1 indicates the barrel of the pen, to which is secured at one end, a pen-point 2 which may be of any suitable form. In Fig. 1 this pen-point is shown inserted in a bottle 3, from which the ink to be used to fill the pen is drawn. At the opposite end of the pen-point the barrel is left open and has an internal fastening means, such as the screw-thread 4. Adapted to engage with this screw-thread is a screw-thread 5 on the end-piece or closing member 6. This end-piece 6 is adapted to screw into the end of the barrel 1 and close the opening therein. This end-piece 6 has a roughened peripheral surface 7 in order that a firm grip may be obtained to unscrew it. This end-piece 6 is hollow and has a valve 8 which is adapted to slide therein. This valve 8 is fastened to the end-piece 6 by means of a pin 9 which engages a slot 10 on the valve; thus, a slight sliding motion is permitted between the valve and the end-piece 6. The valve 8 is adapted to be seated on the end-piece as at 11, where the flanges 12 on the valve engage the seat on the end-piece 6. This valve 8 may be of any

suitable form and material; as shown in Fig. 1, it is preferably of hard rubber. As shown in Fig. 4 it consists of a cork float 13 and a suspending wire 14 which has a loop 15 which is adapted to engage the pin 9 in the same manner in which the slot 10 engages said pin. The pin 9 is fastened to the end-piece 6 at one end, as at 16, so as to prevent the pin from being jolted out of its position. At the other end the pin 9 passes through a slightly enlarged opening in the end-piece 6, as at 17. This opening 17 permits air to be drawn through in order to create a vacuum in the upper end of the barrel 1, so that the ink may be drawn up into said barrel.

The suction necessary to draw up the ink in the barrel is created by forcing the cap 18 over the end of the barrel opposite to that at which the pen-point 2 is found. This cap is adapted to be forced down over the end and withdrawn suddenly, creating a vacuum within the cap and thus drawing air through the opening 17, creating a vacuum within the barrel 1, which in turn draws the ink from the bottle 3 up into the barrel. This cap 18 is adapted to engage a slight taper on the barrel 1, as at 19, so that the cap will be prevented from going too far on the barrel. This cap 18 also has a slightly weakened section, as at 20. This is preferably done by removing some of the material of the cap on its outside surface, forming an encircling concavity, as at 21. This concavity is adapted to receive a pressing packing 22 which may be of any suitable form or material, such as a series of rubber bands or a single rubber band, or an encircling spring. This pressing packing is adapted to create a squeezing pressure on the weakened portion of the cap 18 so that it will bulge internally and will thus form a tight yielding fit around the barrel 1 during the operation of filling. This packing is adapted to be covered by a band 23 which may be of any suitable material, such as steel or hard rubber. This band 23 protects the packing and holds it in place.

On the outside of the barrel 1 of the fountain pen are placed at each end thereof, a pair of grooves 24 and 25. The groove 24 takes the place of the hole which is usually drilled in the cap so that in forcing the cap on the pen the air will not be compressed around the pen-point but will be permitted to escape through the groove. In the case

of the groove 25, it is of such length and so placed that it will permit of the cap to be forced over the end opposite to the pen-point without compressing the air under the cap, allowing it to escape through the groove.

Thus, the air is prevented from forcing the ink out through the pen-point during the first operation of placing the cap on the end.

The end-piece 6 is ordinarily screwed tight onto the barrel, as shown in Fig. 2. When it is desired to fill the pen, this end-piece 6 is unscrewed just sufficient to expose the opening 17. The pen is then held in a vertical position with the pen-point at the top. The cap 18 is then placed over the end-piece 6 and forced onto the barrel 1 until it comes in contact with the tapered surface 19; then the packing 21 forces the weakened portion 20 of the cap in a tight fit around the barrel 1. The pen-point 2 is then dipped in a bottle of ink, as shown in Fig. 1, and the cap withdrawn quickly. By this action a vacuum is formed within the cap 18 and this creates a suction through the opening 17, drawing air between the valve 12 and its seat. When the ink in the pen reaches the valve 12, it floats the same up to its closed position. If sufficient ink has not been sucked in by one operation, as described, the operation may be repeated

until the fountain pen has been filled sufficiently.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a fountain pen, the combination with a barrel having an opening at one end, a closing member for said opening, a valve in said closing member, a supporting pin for said valve, said supporting pin fitting tightly in said closing member at one end and loosely at the other, and a cap for said barrel.

2. In a fountain pen, the combination with a barrel having an opening at one end, a closing member for said opening, said closing member having a screw-threaded connection with said barrel, a valve slidingly supported in said closing member, a pin in said closing member adapted to close said valve, said pin having a tight support at one end and a loose support at the other end, and a cap for said barrel.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JACOB J. MEAD.

Witnesses:

HORATIO WHITING,
JOHN P. DAVIS.