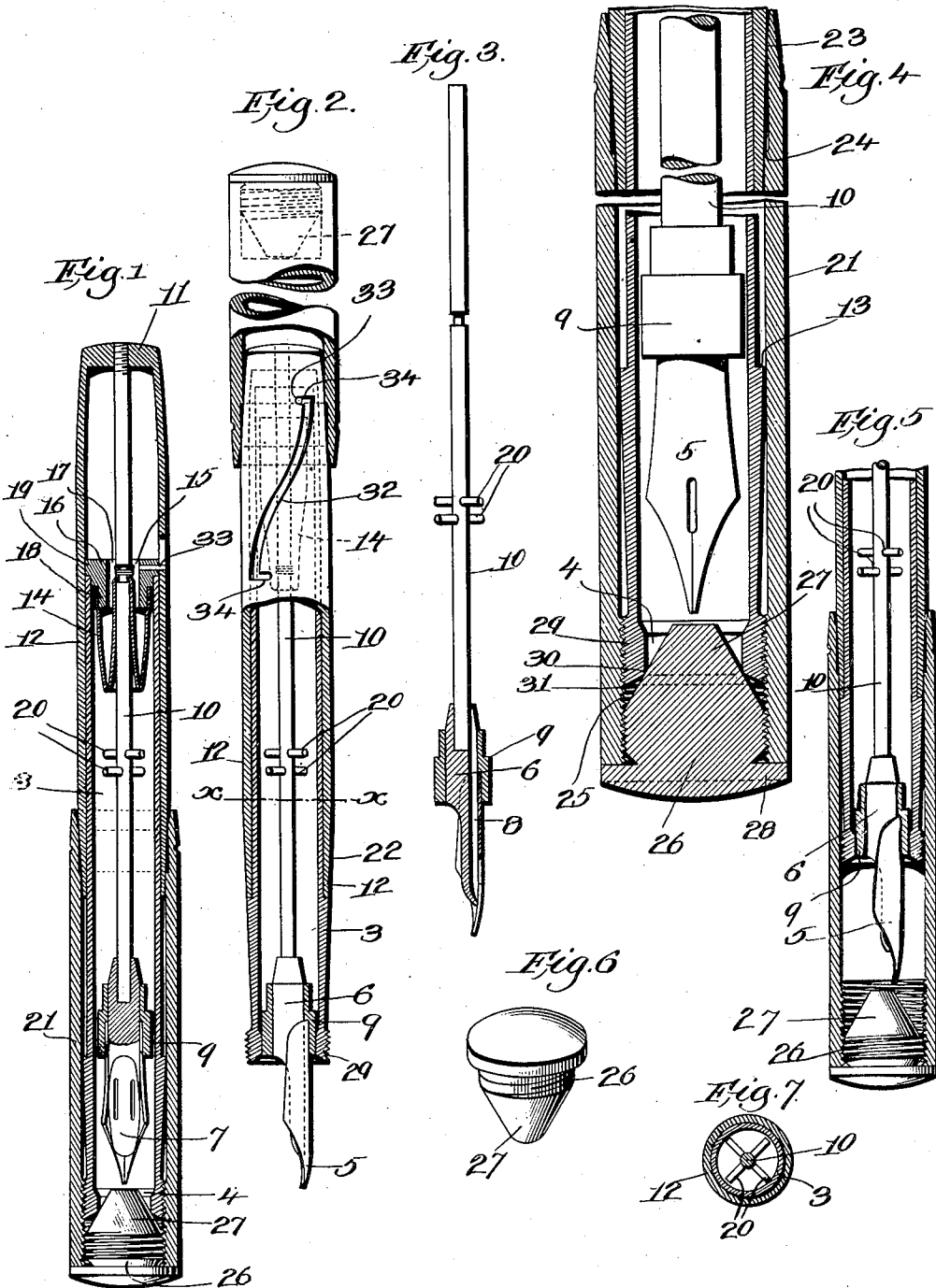


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G. F. BRANDT.  
FOUNTAIN PEN.

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Witnesses.  
W. C. Humphrey.  
Walter R. Trott

Inventor.  
George Franklin Brandt,

by *Henry & Guyon* attys.

# UNITED STATES PATENT OFFICE.

GEORGE FRANKLIN BRANDT, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO CHARLES BRANDT, OF BOSTON, MASSACHUSETTS.

## FOUNTAIN-PEN.

No. 828,920.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, GEORGE FRANKLIN BRANDT, a citizen of the United States, residing at Boston, county of Suffolk, and State of Massachusetts, have invented an Improvement in Fountain-Pens, of which the following description, in connection with the accompanying drawings, is a specification, like numerals on the drawings representing like parts.

This invention relates to that class of fountain-pens in which the pen-point is adapted to be withdrawn into or projected from an open-ended ink-reservoir, such pens commonly being known as "non-leakable" or "disappearing" pens.

The invention aims to provide a novel construction of pen, all as will be more fully hereinafter described and then pointed out in the claims.

In the drawings, Figure 1 is a longitudinal central section of a pen embodying my invention, said view showing the pen withdrawn into the ink-reservoir and the cap applied to the holder. Fig. 2 is a view, partly in section, showing the pen projected ready for use. Fig. 3 is a detail of the pen-support and its connecting-stem. Fig. 4 is an enlarged sectional view through the cap and open end of the ink-reservoir, showing the manner in which the open end of the ink-reservoir is closed when the pen is withdrawn. Fig. 5 is a sectional view of a portion of the pen, showing one way of applying the cap thereto. Fig. 6 is a perspective view of the valve-plug in the end of the cap; and Fig. 7 is a section on the line *xx*, Fig. 2.

3 designates the ink-reservoir, which is provided with an open end 4, through which the pen is projected. Said open end 4 is of less diameter than the interior of the ink-reservoir.

5 designates the pen-point, which is carried by a suitable pen-support 6, that is arranged to be withdrawn into or projected through the open end of the ink-reservoir. This pen-support may have any suitable or usual construction and is herein shown as comprising a feed-bar 7, having a usual feed-groove 8 therein and a clamping-ring 9, which encircles the feed-bar and one end of the pen and holds the latter firmly in place. The clamping-ring has substantially the same diameter as the open end 4 of the ink-reser-

voir, so that when the pen-support is projected into said open end, as shown in Figs. 2 and 5, said ring completely fills the end of the reservoir and prevents the escape of ink therefrom except through the feed duct or groove 8.

10 designates a stem which is connected to the pen-support and which extends longitudinally through the ink-reservoir 3 and projects beyond the closed end thereof. The end of the stem 10 is secured to the closed end 11 of what I have termed a "holder" 12, said holder being shaped to telescope over the ink-reservoir and having a length nearly equal to that of the reservoir, as best seen in Fig. 2. The ink-reservoir is preferably made with an exterior shoulder 13, against which the end of the holder 12 abuts when the pen is projected, as shown in Figs. 2 and 5, and the exterior shape of the holder conforms to the exterior shape of the exposed portion of the ink-reservoir.

In order to prevent any leakage of ink through the aperture in the closed end of the ink-reservoir, through which the stem 10 projects, I employ a flexible tubular packing member 14, one end of which is tightly secured to the stem 10, as at 15, and the other end of which is tightly secured to the end of the ink-reservoir. One convenient way of securing it to the reservoir is to provide the end of the reservoir with a plug 16, having an aperture 17 therein, through which the stem projects, and also having a nipple 18, over which one end of the tubular member 14 is placed and to which it is secured to make a non-leakable joint. The flexible member 14 may be of any suitable material—such, for instance, as rubber. When the pen is projected, as shown in Fig. 2, the flexible member 14 is in a substantially straight unfolded condition, as shown in dotted lines, Fig. 2; but when the holder 12 is drawn backwardly over the ink-reservoir, thereby to withdraw the pen into the ink-reservoir, the end of the tubular member 14, which is fastened to the stem 10, is drawn into and partly through itself, as best shown in Fig. 1. This form of packing makes an absolutely tight joint which is practically indestructible. The plug 16 is preferably made with a flange 19, which serves to properly position the plug when the parts are being assembled.

20 designates steadying-pins projecting from the stem 10. These pins are of a

length to engage the inner surface of the ink-reservoir and are for the purpose of steadying the stem during its movement.

21 designates the cap of the pen, and when in place for closing the pen it fits over and engages the tapered portion 22 of the holder, but does not engage any portion of the ink-reservoir 3. The open end of the cap 21 is provided with the interior tapered portion 23 and with a shoulder or corner 24, both of which are shaped to engage the outer surface 22 of the holder, as best seen in Fig. 1. The cap is made of two parts, one, the cylindrical member 21, which is open at both ends and which is interiorly screw-threaded at one end, and the other, the valve member, which is screwed into the screw-threaded end of the cylindrical member. The valve member or valve-plug is formed with the tapered or conical portion 27, the screw-threaded shank portion 26, and the cap or flange portion 28. The valve member or valve-plug is screwed into the cylindrical member 21 from the screw-threaded end thereof, and when the valve-plug is in place the flange portion 28 engages the end of the cylindrical member 21, and thus positively positions the valve portion 27 properly, so that when the cap is applied to the pen said valve portion will close the open end of the reservoir, as shown in Figs. 1 and 4.

The ink-reservoir is provided at its end with exterior screw-threads 29, which are adapted to engage the screw-threaded portion 25 of the cap when the latter closes the pen. The valve-plug 27 is of a shape to partially enter the open end 4 of the ink-reservoir and to engage the inner corner 30 thereof, and since the taper of the plug is on a different angle from the end of the ink-reservoir the space 31 between the ink-reservoir end and plug when the pen is closed is sufficient to prevent the ink from working over the end of the ink-reservoir by capillary attraction. The exterior screw-threaded portion 30 of the ink-reservoir and the screw-threaded portion of the plug 26 are of the same diameter, and they both engage the same interiorly-screw-threaded portion 31 of the cap. This simplifies greatly the construction of the pen. The holder is slotted, as at 32, to receive a pin or projection 33, extending from the ink-reservoir. This slot is preferably inclined, as shown in Fig. 2, and is provided at its end with a locking-notch 34, into which the pin 33 may be turned, thereby to lock the pen either in its extended or withdrawn position.

In opening the pen for use the cap 21 is first unscrewed from the screw-threaded portion 29 of the ink-reservoir and then removed, it preferably being placed on the opposite end of the holder, as shown in Fig. 2, and thereafter the pen may be projected by grasping the portion 3 of the ink-reservoir

with the fingers of one hand and the holder 12 with the other hand, turning the holder to release the pin 33 from one locking-notch 34 and then sliding the holder forwardly on the ink-reservoir into the position shown in Fig. 2. When the holder has reached this position, it is locked by turning it sufficiently to cause the pin 33 to enter the adjacent locking-notch.

It will be noted that the pen-support is rigidly secured to the holder, and therefore moves with the holder. The pen-point therefore is always the same distance from the tapered end 22 of the holder, and it is possible to close the pen with the cap 21 without withdrawing the pen into the reservoir, as seen in Fig. 5, and this may be done without danger of injuring the pen-point 5 by bringing it in contact with the valve-plug 26.

The drawings illustrate one embodiment of my invention only.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a fountain-pen, an ink-reservoir open at one end, a movable pen-support adapted to be withdrawn into the reservoir, a holder within which the ink-reservoir is received, a stem connecting the holder and pen-support, said stem projecting through the closed end of the ink-reservoir, and a flexible tube having one end secured to the ink-reservoir and the other to the stem of the pen-support.

2. In a fountain-pen, an ink-reservoir having an open end, a pen-support movable within said open end, a stem connected to said pen-support and extending through the closed end of the ink-reservoir, means exterior to the ink-reservoir to operate said stem, and a flexible tube secured at one end to the ink-reservoir, and at the other end to the stem.

3. In a fountain-pen, an open-ended ink-reservoir, a pen-support within the open end of said reservoir and adapted to be withdrawn therein, a stem connected to the pen-support and extending longitudinally of the ink-reservoir, said stem having steadying projections to engage the inner walls of the ink-reservoir, and means connected to the stem to move the pen-support relative to the reservoir.

4. In a fountain-pen, an ink-reservoir open at one end, a movable pen-support within the open end of the reservoir, a holder within which the ink-reservoir is received, a stem connecting the holder and the pen-support, and steadying projections carried by the stem and engaging the inner walls of the ink-reservoir.

5. In a fountain-pen, an ink-reservoir open at one end, a movable pen-support within the open end of the reservoir, a holder within which the ink-reservoir is movably received,

said holder having a curved slot, a stem connecting the holder and the pen-support, and a pin projecting from the reservoir and engaging said slot.

5 6. In a fountain-pen, an ink-reservoir open at one end, a movable pen-support within the open end of the reservoir, a holder having a curved slot and within which the ink-reservoir is received, a stem connecting the holder  
10 and pen-support, and a pin projecting from the reservoir and engaging the slot in the holder said slot having at each end locking-notches.

7. In a fountain-pen, an open-ended ink-reservoir, a movable pen-support within the open end of the reservoir, a holder within which the ink-reservoir telescopes, a stem connecting the holder and the pen-support, a plug having a flange fitting over the closed  
20 end of the reservoir and a nipple extending within the reservoir, a flexible tube fitted at one end over said nipple and at the other end around said stem.

8. A fountain-pen comprising an ink-reservoir, a pen-support capable of being withdrawn into the reservoir, a holder telescoping on the ink-reservoir and externally tapered at its lower end, and a cap having an open  
30 end to fit over the tapered end of the holder and provided interiorly at its closed end with means for connection with the end of the reservoir, said open end having separated bearing-surfaces whereby the cap may be used to close the pen at either the withdrawn or projected position of the latter.

9. A fountain-pen comprising an ink-reservoir provided with a screw-threaded open end, a holder telescoping over the ink-reservoir and exteriorly tapered at its lower end, a cap having an open end to fit over the tapered  
40 end of the holder and having its closed end screw-threaded, and a valve-plug within the cap at its closed end whereby the cap may serve to close the pen in the extended position of the reservoir and holder by fitting tightly over the taper of the holder and may  
45 also serve to close the pen in the retracted position of the reservoir and holder by being screw-threaded to the reservoir.

10. A fountain-pen comprising an ink-reservoir open at its forward end, exteriorly cylindrical for substantially its entire length, and provided with an external shoulder, a holder within which the ink-reservoir is movably received, the end of the holder being adapted to abut the shoulder when the pen is projected, a pen-support within the open end of the ink-reservoir, and connections between  
55 the pen-support and holder, the diameter of the forward end of the holder being substantially the same as that of the ink-reservoir adjacent the shoulder.

11. A fountain-pen comprising an ink-reservoir open at its forward end, exteriorly cylindrical for substantially its entire length,

provided with an external shoulder near its open end and tapered forwardly of the shoulder, a pen-support within the open end of the ink-reservoir, a holder within which the ink-reservoir is movably received, and connections between the pen-support and holder,  
70 the end of the holder adapted to abut the shoulder of the reservoir when the pen is projected, and said holder being tapered at its end to form a continuation of the taper of the ink-reservoir. 75

12. In a fountain-pen, an open-ended ink-reservoir provided with exterior screw-threads near its open end, a movable pen-support within the reservoir, a cap having an interior screw-threaded portion of uniform diameter near its outer end, and a conical valve-plug screw-threaded into the end of the cap, a portion of the screw-threads of the cap being adapted to be engaged by the exterior  
80 screw-threads of the ink-reservoir. 85

13. A fountain-pen comprising an open-ended ink-reservoir provided with screw-threads, a movable pen-support within the reservoir, and a cap having a conical valve-plug screw-threaded into its closed end, the conical portion of the plug adapted to enter the open end of the reservoir and contact with the corner thereof, said cap having screw-threads to engage those of the ink-reservoir. 90 95

14. In a fountain-pen, an open-ended ink-reservoir provided with exterior screw-threads near its open end, a pen adapted to be withdrawn into the ink-reservoir, and a cap formed of two members, one a cylindrical member open at both ends and having interior screw-threads at one end, and the other a conical valve member which is screwed into the cylindrical member from the screw-threaded end thereof, said valve member being adapted to close the open end of the ink-reservoir when the cap is applied and constituting the closed end of the cap. 100 105

15. In a fountain-pen, an open-ended ink-reservoir provided with exterior screw-threads near its open end, a pen adapted to be withdrawn into the ink-reservoir, and a cap, said cap comprising a cylindrical member open at both ends and having interior screw-threads at one end, and a valve member presenting a conical valve portion for closing the end of the ink-reservoir, a screw-threaded shank portion for engaging the interior screw-threads of the cylindrical member and a head portion to engage the end of said cylindrical member. 110 115 120

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

GEORGE FRANKLIN BRANDT.

Witnesses:

LOUIS C. SMITH,  
CHARLES BRANDT.