(Model.)

P. P. FLOURNOY.

FOUNTAIN PEN.

No. 256,206. Patented Apr. 11, 1882.

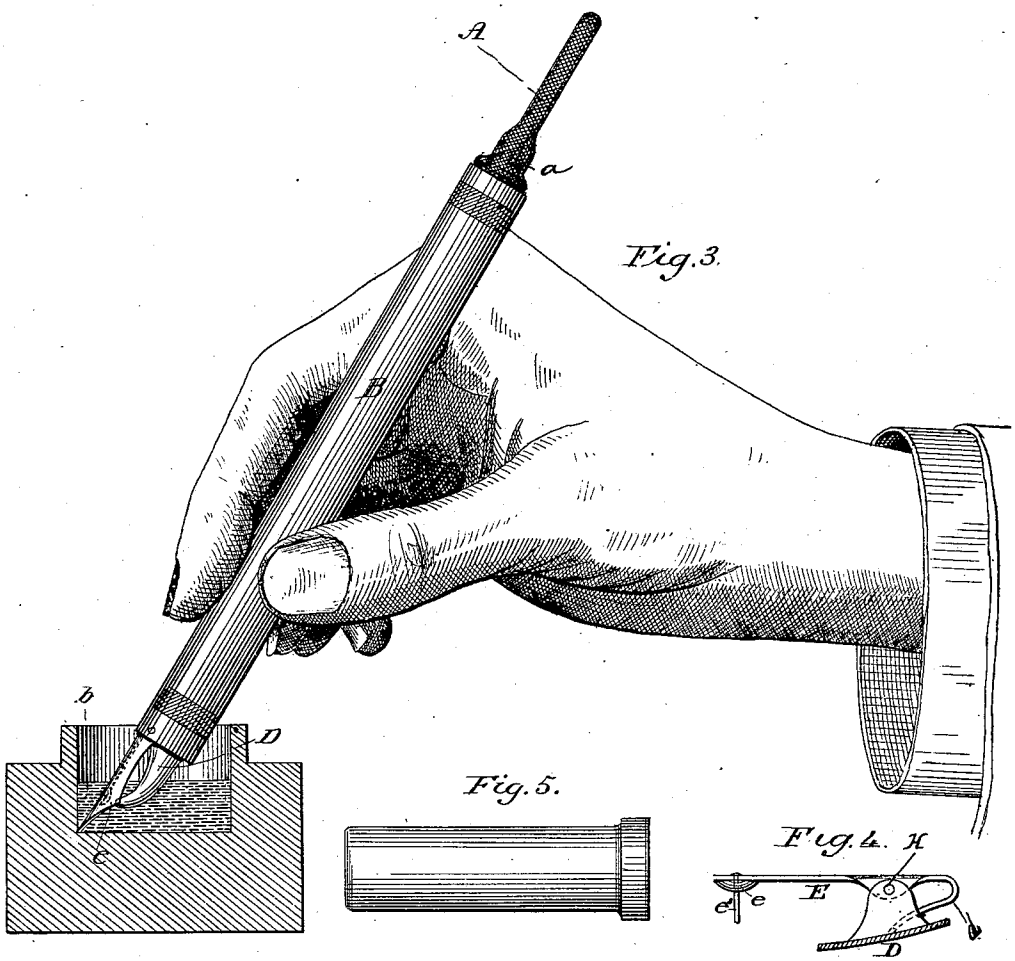


Fig. 3.

Fig. 5.

Fig. 4.

Fig. 1.

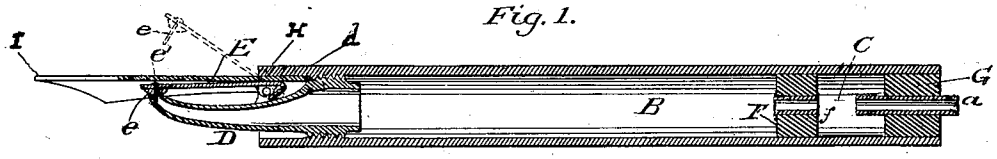
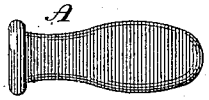


Fig. 2.



Attest:

R. F. Barnes.

Sidney P. Hollingsworth

Inventor:

Parker P. Flournoy

per Robert M. Newton

Attorney & Agt. in fact

UNITED STATES PATENT OFFICE.

PARKE P. FLOURNOY, OF BETHESDA, MARYLAND.

FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 256,206, dated April 11, 1882.

Application filed April 11, 1881. (Model.)

To all whom it may concern:

Be it known that I, PARKE P. FLOURNOY, a citizen of the United States, residing at Bethesda, in the county of Montgomery and State of Maryland, have invented a new and useful Improvement in Fountain-Pens, of which the following is a specification.

Figure 1 represents a longitudinal sectional view, showing the interior arrangement of my pen-holder. Fig. 2 represents a hollow rubber bulb. Fig. 3 represents a vertical view of my pen-holder in position for filling. Fig. 4 represents the ink-regulator. Fig. 5 represents cap for protecting the pen.

The object of my invention is to furnish an improved handle or pen-holder containing an ink-reservoir capable of holding a sufficient quantity of ink for writing many hours without refilling, allowing a flow of ink from the pen only as demanded by the action of the pen (while writing) upon the ink-regulator, which is designed and arranged for that purpose.

My invention consists of a pen handle or holder constructed in the form of a tube or cylinder, which may be made of hard rubber or any other suitable material, containing at its lower end a feeder properly inserted and secured in the cylinder and projecting a proper distance. The lower end of the feeder has a tapering form, and is curved upward, so as to bring its outlet or orifice nearly to a parallel with the inner surface of the cylinder. On the upper part of the feeder (so as to be partly within the lower end of the cylinder) is attached a bar, extending beyond the outer edge of the said outlet or orifice of feeder. This bar is attached by a rivet to suitable bearings on the feeder, and has a spring so arranged as to keep the lower end of the bar down upon the said orifice. On the under side of this lower end of the bar is attached a pad of rubber or other suitable material by a pin, which extends through the lower surface of the pad, and fits more or less loosely in the orifice, as may be required to secure a suitable flow of ink. The spring is so arranged that its pressure on the bar and pad may keep the orifice air-tight, except when released by the action of the pen, as hereinafter described. The object of this feeder with bar, spring, pad, and pin, as described, in combination with other parts to be described, is to regulate the flow of the ink while writing. It is also to be used, in combination with the hollow rubber bulb, in charging the holder or reservoir with ink and in washing the cylinder, when necessary, as will be more fully explained hereinafter.

Near the upper end of the holder or cylinder I place an ink-stop, consisting of a centrally-bored plug, fitted air-tight, and at the end of the holder or cylinder a second plug, about half an inch from the first, inclosing an air space or chamber between the two. Through the center of this top plug passes a small tube, (or tube and plug may be made all in one piece,) extending about half-way into the air space or chamber, and directly opposite the bore, and extending also about a quarter of an inch beyond the top of the holder or cylinder. This air space or chamber is designed and so arranged as to prevent the escape of ink when the pen-holder is reversed. This ink-stop is intended to take the place of a valve or any other contrivance for preventing the ink from flowing out of the upper end of the reservoir. The two plugs and inclosed space do not of themselves constitute an ink-stop, for if air were admitted through the orifice in feeder, the holder being reversed, the ink would escape; but they do prevent the outflow of ink in combination with an air-tight feeder, for when no air is admitted only a drop or two will be forced through the bore of interior plug into the inclosed chamber by shaking, and this is prevented from flowing through the bore in the upper plug by the tubular extension in the inclosed air space or chamber. When the pen is in position for writing any ink in the inclosed space will flow down into the reservoir. Then for filling I use a hollow rubber bulb, of a capacity equal to that of the reservoir, and made to fit air-tight over the tube, which is extended from the top of the holder.

I apply the pen by sliding it over the bar at the end of the feeder and under the lower

edge of the holder far enough so to act upon the bar that when the point of the pen is pressed on the paper in writing it will depress the spring and raise the pad and open the way through the feeder into the reservoir.

I fill the reservoir with ink in the following manner: Compressing the bulb between the finger and thumb, I fit it on the projecting tube at the top of the holder. It will remain compressed in this position for any length of time, as it fits air-tight. I then press the point of the pen on the bottom of the ink-stand, the orifice of the feeder being submerged in the ink. This pressure upon the pen depresses the upper end of the ink-regulator and raises the pad from the orifice in the feeder. The compressed bulb then expands automatically, and, the air being exhausted from the reservoir, the ink flows in to take its place. The bulb is then removed, and the device is ready for use.

The cylinder is cleaned by removing the pen, elevating the lower end of the ink-regulator until the pin is withdrawn from the orifice in the feeder, (in the position shown by dotted lines in Fig. 1,) placing feeder in water, and then manipulating the bulb, which is attached as for filling, alternately compressing and allowing it to expand, so that the water is drawn in and expelled from the reservoir, removing any obstructions which may have lodged in the feeder through the orifice which has been opened by the withdrawing of the pin from it. For the safety of the pen when carried in the pocket, and to avoid the opening of the feeder by any accidental pressure on it, I inclose it with a suitable cap.

In the drawings, Fig. 1 represents a longitudinal sectional view, showing the interior arrangement and construction of the fountain pen-holder. B is the interior of the tube or ink-reservoir. D is the feeder, as described in specification. E is the bar with its attached parts, as described, constituting the ink-regulator. H shows the bearings or upper side of feeder, with rivet on which the bar works. Under the upper end of the bar is the spring *d*, the action of which is to keep the lower end of the bar pressed down. *e* is the pad attached to under side of bar at its lower end by a pin, *e'*, which passes through pad and enters the outlet or orifice of feeder, fitting more or less loosely therein. I is the pen in position for use. The dotted line represents the bar elevated for cleaning. F, near upper end of holder, represents a centrally-bored plug fitted air-tight into the cylinder. G is also a plug, fitted air-tight into end of cylinder about half an inch distant from plug F, the space between the two forming an air-chamber, C. *a* is its tube, extending through its center into an air-chamber, C, about a quarter of an inch, and beyond top of holder about the same length.

Fig. 4 is the ink-regulator. E represents the bar attached by rivet to bearings H on upper side of feeder D. *d* is the spring. *e* is the pad; *e'*, the pin securing it to the bar and extending through the pad into outlet or orifice of feeder.

Fig. 5 represents a cap for the protection of the pen. Fig. 2 is the hollow rubber bulb. This bulb A, fitted over end of tube *a*, is also represented in Fig. 3 as attached to the upper end of the pen-holder and compressed, a flattened edge view being exhibited. By dipping the pen into the inkstand *b*, as in Fig. 3, the end of feeder B being submerged, and pressing on the point of pen, as shown in drawings, the pad *e* of the ink-regulator is raised, thus opening the orifice of feeder; and then, by the automatic expansion of the bulb, the ink is forced into the reservoir, which is thus filled by atmospheric pressure. When the bulb has fully expanded the reservoir is known to be full, because the capacity of the bulb is the same with that of the reservoir. When the bulb has ceased expanding and the pressure is removed from the pen the pad closes on the orifice of the feeder by the automatic action of the spring, and the orifice is thus closed while under the ink. This is of great importance, for if the orifice were left open when the feeder is removed from the ink, there would be a further expansion of the bulb, drawing up a portion of the ink from the reservoir into the bulb, and drawing air into the reservoir after the ink. This is avoided by the automatic closing of the orifice while under the ink. After filling the bulb is removed and the pen is ready for use.

In Fig. 1 the dotted lines represent the device as arranged for cleaning, the ink-regulator being elevated after the removal of the pen, so that the pin *e* is entirely withdrawn from the orifice in the feeder. At all other times, except when arranged for cleaning, the tension of the spring *d* presses the upper end of the bar upward, so that the lower end, with the pad, is pressed toward the orifice in feeder. This is because in its ordinary position the spring *d* presses on the feeder behind a perpendicular let fall from the bearings on the feeder; but when the pen is removed and the lower end of the bar is elevated, as shown in dotted lines, Fig. 1, the spring *d* presses on the feeder in front of such perpendicular let fall on the feeder from bearings H, and the tension of the spring *d* presses the bar in the opposite direction, holding it up from the orifice of feeder, leaving that orifice open by the withdrawal of the pin *e'* from it, so that obstructions may readily pass out through it when the bulb is used to draw in and expel water for this purpose.

I have thus described my invention.

I am aware that a fountain-pen-holder with feeder, &c., is not new; neither a hollow rubber bulb for filling. These I do not claim; but

What I do claim as new and as my inven-

tion, and desire to secure by Letters Patent, is—

1. A fountain pen-holder having an ink-regulator consisting of a bar, E, spring *d*, pad *e*, and pin *e'*, attached to the feeder, all substantially as shown and described.

2. The combination, in a fountain pen-holder, of the ink-stop consisting of two plugs fitted air-tight, one near and the other in upper end of cylinder, both centrally bored, the one in upper end or top having a tube with internal and external projections, the two plugs inclosing between them an air-chamber with a feeder closed air-tight by the continued pressure of a spring, all substantially as shown and described.

PARKE P. FLOURNOY.

Witnesses:
H. A. HALL,
ROBERT M. NEWTON.