

No. 620,216.

Patented Feb. 28, 1899.

J. BLAIR.
FOUNTAIN PEN.

(Application filed June 28, 1898.)

(No Model.)

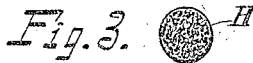
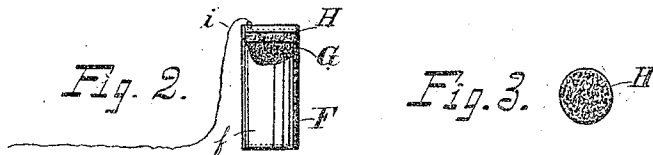
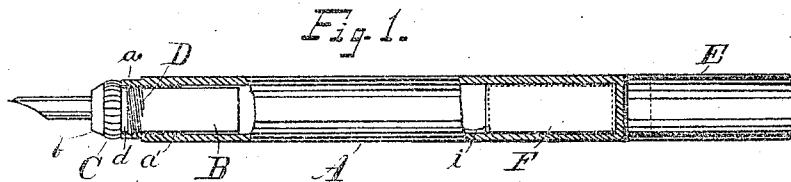


Fig. 4.

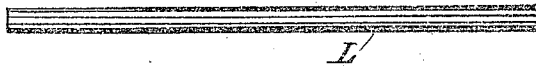
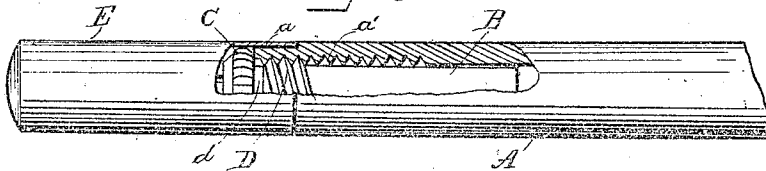


Fig. 5.



WITNESSES:

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FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 820,216, dated February 23, 1899.

Application filed June 29, 1898. Serial No. 884,741. (No model.)

To all whom it may concern:

Be it known that I, JOHN BLAIR, a citizen of the United States, residing at New York, (Brooklyn,) in the county of Kings and State of New York, have invented certain new and useful Improvements in Fountain-Pens; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention comprises, first, a novel construction of the pen-section; second, a new soluble ink charge or cartridge, and, third, a writing outfit embracing the improved pen, the ink-cartridge, and means for adjusting the latter in the pen-barrel.

The accompanying drawings illustrate the invention, in which—

Figure 1 is a longitudinal view of the pen with portions of the barrel in section. Fig. 2 is a side elevation of a cartridge, partly in section. Fig. 3 is a plan of the sponge-disk. Fig. 4 is a side view of the adjusting-rod; and Fig. 5 is an enlarged outline of the cap and part of the body, a portion of each being broken away to expose the interior construction.

The letter A indicates the body or barrel of my fountain-pen, having a cap-seat *a* and an interior thread *a'* at its front or open end.

E is the pen-cap.

B denotes the pen-section, whose body is largely within the pen-barrel. It has a front terminal bevel *b* and a peripherally-milled flange or knurl C, having the same circumferential measure as the cap-seat *a*. A short thread D is formed on the pen-section to engage the barrel-thread *a'*, and an annular groove *d* is cut between the thread D and the knurl C.

In fountain-pens heretofore constructed with a flange on the pen-section the cap has been made to fit upon the pen-section and to stop against the flange, leaving exposed the joint between the pen-section and the barrel. In my pen the cap entirely covers this joint and so affords additional protection against ink leakage, besides greatly strengthening

this the most fragile part of the pen. The short thread D is sufficient to retain the pen-section in the barrel, and the air-filled groove or chamber *d* acts as a barricade against an outflow of ink upon the fingers. The contact of the barrel-thread with the non-threaded part of the pen-section holds the latter steady, but does not allow a rigid adhesion of the parts when the ink becomes dry, to separate which when held by a long double thread not infrequently breaks one part or the other. By means of the front bevel *b* on the pen-section the cap is more easily adjusted on the pen.

The ink-cartridge F has a porous flexible casing *f*, made in the form of an elongated bag and filled with a dry soluble ink-powder G. This ink is of various colors and qualities, and in filling the cartridge with a grade which dissolves very freely I adjust upon the powder at the end of the cartridge first in contact with the fluid a piece or disk of sponge H or some equivalent material to retard the action of the fluid in dissolving the powder. When a cartridge is newly inserted, the water readily penetrates the sponge-disk and the pores in exposed parts of the casing and ink is formed rapidly. After the pores of the casing have become partially clogged with ink sediment the collapse of the cartridge subjects its sides more fully to the action of the solvent and the proper dissolution of the powder is maintained. A cord or thread *i* is attached to each cartridge, by means of which the empty case is withdrawn from the barrel.

The adjusting-rod L is applied to push the cartridge into position at the bottom of the pen-barrel. When the cartridge has been inserted, the barrel is filled with water, preferably soft water, which soon dissolves a portion of the powder and becomes ink. The pen-section is then put on and the pen is ready for use. After using out the fluid water is added again, and so continued until the powder is all dissolved, when the empty cartridge case is withdrawn and a full one inserted.

What I claim, and desire to secure by Letters Patent, is—

1. In a fountain-pen a pen-section having a short exterior thread and a rearwardly-extended non-threaded portion, a body having a long interior thread adapted, in part, to engage the thread on the pen-section, and, in

part, to make contact with the non-threaded portion of the pen-section for the purposes herein specified.

2. In a fountain-pen, a pen-section having
5 a short beveled front end, a milled knurl adjacent thereto, there being an annular groove beside the knurl, a short thread and a rearwardly-extended non-threaded portion; a
10 pen-body having an interior thread adapted in part to engage the thread on the pen-section, and in part to make contact with the non-threaded portion of the pen-section, a cap-seat at the forward end of said body of the
15 same circumferential size as the said knurl, and a cap adapted to cover said knurl and occupy said seat substantially as herein set forth.

3. In a fountain-pen, an ink-cartridge consisting of a porous, flexible casing, soluble ink-powder therein, and a sponge-disk in one
20 end, interposed between the ink-powder and the solvent, substantially as described.

4. In a fountain-pen an ink-cartridge having a porous, flexible casing adapted to contain
25 ink-powder, a sponge-disk interposed between the ink-powder and the solvent and a withdrawal thread attached to said casing as herein set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN BLAIR.

Witnesses:

HORACE CAMFORT,
WILBERT D. SWAIN.