A. T. CROSS.

FOUNTAIN PEN.

APPLICATION FILED AUG. 21, 1906. RENEWED MAY 14, 1908.

900,833. Patented Oct. 13, 1908.

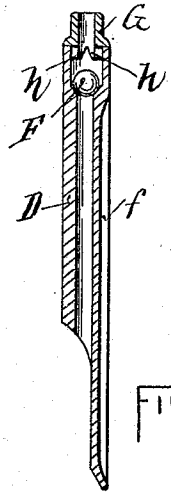

FIG. 5.

FIG. 6.

FIG. 7.

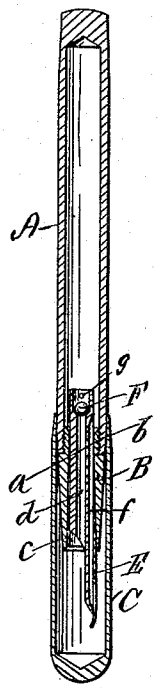

FIG. 1.

FIG. 3.

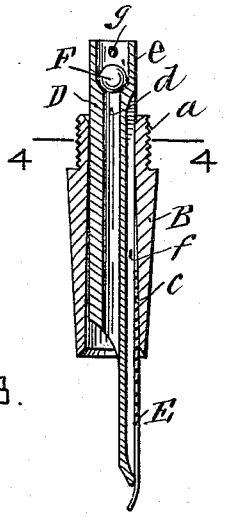

FIG. 2.

FIG. 4.

WITNESSES:

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FOUNTAIN-PEN.

No. 900,833. Specification of Letters Patent. Patented Oct. 13, 1908.

Application filed August 21, 1906, Serial No. 331,517. Renewed May 14, 1908. Serial No. 432,902.

To all whom it may concern:

Be it known that I, ALONZO T. CROSS, a citizen of the United States, residing at Providence, in the State of Rhode Island, have invented a new and useful Improvement in Fountain-Pens, of which the following is a specification.

My invention consists in the improved combination of a gravitating spherical valve, with the upper end of the air-duct of the pen section, whereby the ink will be prevented from escaping from the ink reservoir when the pen is not in use, and whereby the action of the ink in its flow to the pen will be regulated.

In the accompanying drawings, Figure 1 represents a longitudinal axial section of a fountain pen provided with my improvement. Fig. 2 represents an enlarged axial section of the pen section of the fountain pen. Fig. 3 represents an enlarged side view of the air-duct plug, showing the ink-duct for leading the ink to the under side of the nibs of the pen. Fig. 4 represents a transverse section taken in the line 4 4 of Fig. 2. Fig. 5 represents a longitudinal section of the plug showing a modification. Fig. 6 represents a side view of the perforated cap of the valve chamber of the air-duct. Fig. 7 represents a view of the inner end of the said cap.

In the drawing, A represents the barrel of the ink reservoir, which is closed at its upper end, B the pen section, and C the cap for covering the pen section when the pen is not in use. The pen section B is provided with the external screw thread *a*, which engages with the internal screw thread *b* of the barrel A, the said pen section being also provided with a bore *c*, which is preferably made of slightly increased diameter at its lower end, and within the bore *c* of the pen section B is placed the plug D, the said plug being provided centrally with the air-duct *d*, and the valve chamber *e* and externally with the groove *f*, which latter serves to form in connection with the inner wall of the pen section, a duct for the passage of the ink from the reservoir A to the nibs of the writing pen E, the said writing pen being held between the periphery of the plug D, and the inner wall of the lower end of the pen section. The valve F is preferably made in spherical form, of lead or other suitable metal, and as shown in Figs. 1 and 2, is retained in the valve chamber *e* by means of the transverse wire *g*, but in Fig. 5 a perforated cap G is employed to retain the said valve loosely in the said valve chamber, the inner face of the said cap being provided with the bosses *h*, *h*, which serve to allow the free passage of ink under the valve when the writing pen is turned upward.

When the pen is in use the action of the ink as it flows through the ink-duct to the pen serves to raise the valve F rhythmically from its seat, and thus allows the passage of a bubble of air through the valve chamber to the ink reservoir, when required.

I claim as my invention:

A fountain pen provided with an ink-duct adapted for the passage of ink from the reservoir to the writing pen, and having an air-duct leading upward to the ink reservoir, and an automatic valve adapted to close the air-duct, to regulate the flow of ink to the pen.

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