No. 781,649. PATENTED FEB. 7, 1905.

R. A. HAMILTON.

FOUNTAIN PEN.

APPLICATION FILED MAY 20, 1904.

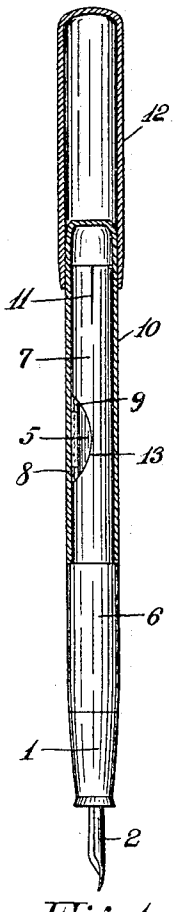

Fig. 1

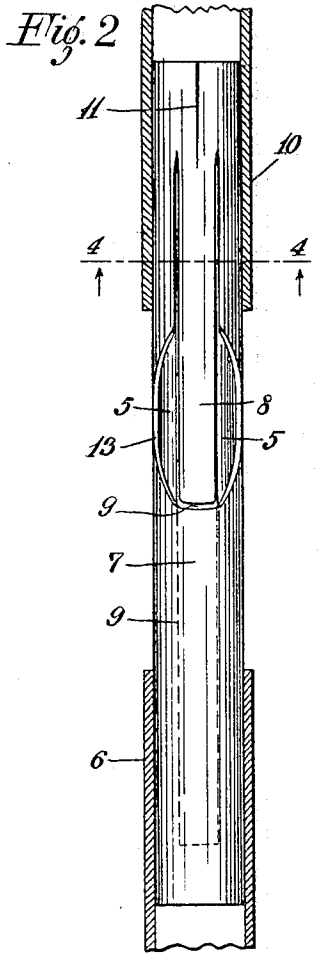

Fig. 2

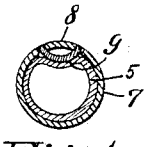

Fig. 4

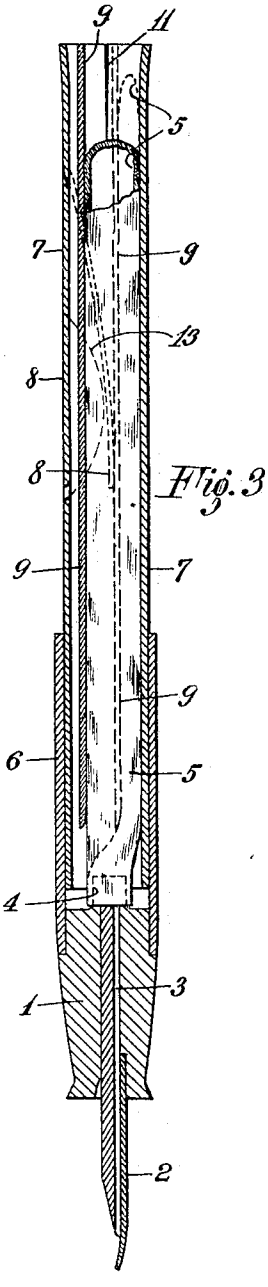

Fig. 3

Witnesses
Juliant. Hooster.
George N. Kerr.

R. A. Hamilton Inventor
By his Attorney C. Edwards

No. 781,649. Patented February 7, 1905.

UNITED STATES PATENT OFFICE.

ROBERT A. HAMILTON, OF SEYMOUR, CONNECTICUT, ASSIGNOR OF ONE-HALF TO JOHN P. LEIN, OF NEW YORK, N. Y.

FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 781,649, dated February 7, 1905.

Application filed May 20, 1904. Serial No. 208,834.

To all whom it may concern:

Be it known that I, ROBERT A. HAMILTON, a citizen of the United States, residing at Seymour, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Fountain-Pens, of which the following is a full, clear, and exact specification.

This invention relates to fountain-pens, and more especially to self-filling pens having a compressible reservoir.

The object of the invention is to provide improved means for compressing the reservoir which shall be compact and effective to empty the reservoir without requiring undue manipulation or distortion of the reservoir.

It is well known that in this kind of fountain-pen the reservoir is subject to rapid deterioration on account of the distortion to which it is subjected in refilling, and by this invention the reservoir can be effectively compressed with but a minimum of wear and distortion. Instead of twisting or rotating the reservoir to compress it I propose to accomplish this by means of a pressure-bar disposed longitudinally of the reservoir and adapted to bear equally throughout its length on the reservoir when actuated. The pressure-bar is preferably carried by a spring mounted on the pen-body, which automatically retracts the pressure-bar to its normal position, leaving the reservoir free to expand by its own resiliency and draw in the ink through the pen-point. The reservoir is protected from accidental compression and injury by being carried within a tube which is cut away to permit the pressure-bar to be actuated to compress the reservoir. The usual cylindrical casing is provided to protect the parts, which can be partially withdrawn to permit compression of the reservoir, and the pen does not differ in external appearance from the ordinary fountain-pen and has equal capacity.

Figure 1 is a view, partly in section, of my improved fountain-pen. Fig. 2 is a detail view showing the manner of mounting the pressure-bar. Fig. 3 is a longitudinal section on an enlarged scale, and Fig. 4 is a transverse section on the line 4 4 of Fig. 2.

1 represents the body or lower end portion, in which is mounted the pen-point 2 and having the ink-passage 3. The body portion has a reduced inner end 4, on which a compressible reservoir or bulb 5 is mounted, being secured thereto by cement or other suitable fastening means. The bulb may be made of rubber and is of sufficient length and diameter to give the desired capacity. The bulb is closed at one end and reduced at the open end, so as to fit closely over the end 4 of the body portion. For convenience in manufacture the intermediate tube 6 is made separate from the body portion 1 and is rigidly fastened thereto.

Attached to the inside of the intermediate tube 6 is a protecting-tube 7, which has the twofold function of protecting the bulb from accidental compression and injury and also of carrying the spring on which the pressure-bar is mounted.

Referring to Fig. 2, 8 is a spring-tongue cut out of the tube 7 and extending from the upper end about to the middle of the bulb or reservoir 5. Attached to the end of the spring 8 within the tube is the pressure-bar 9, which extends the length of the reservoir and is convex in cross-section, as shown in Fig. 4, so that when depressed the reservoir will be entirely emptied. This also obviates danger of cutting the reservoir by sharp corners. The pressure-bar is attached to the spring at about its middle portion, so that when depressed it will bear equally throughout the length of the reservoir. The dotted lines in Fig. 3 show the position of the parts when the pressure-bar is depressed. The tube 7 is cut away on one side at 13, so as to permit the finger of the operator to entirely depress the pressure-bar. The end tube 10 fits over the tube 7, and the latter has one or more splits in its upper end, as at 11, so as to form a spring-tongue to frictionally engage the inside of the tube 10. If desired, some positive locking means may

be used for securing the tube 10 to the body portion; but ordinarily the means just described will be sufficient.

12 is the usual end cap, which fits on either end.

In order to fill the pen, the outer tube 10 is slid back sufficiently to expose the spring 8 and the protecting-tube 7. By pressing on the spring 8 the reservoir will be compressed, driving out through the passage any air or ink contained therein. If now the pen be inserted in a body of ink and the pressure on the reservoir relieved, ink will be drawn into the reservoir by its expansion. It will be observed that the spring 8 withdraws the pressure-bar, permitting the reservoir to expand freely instead of using its resiliency to return the compressing mechanism to normal position, as has been done heretofore in pens of this type. This allows complete expansion, relieves the reservoir of a great deal of wear, and prolongs its life, which is also aided by the manner of compression, since there is the least possible distortion and strain on the reservoir by compressing it longitudinally by an independently-retracted pressure-bar. The spring and pressure-bar occupy a minimum of space, and there is nothing liable to get out of order. It will also be seen that the tube 7 protects the reservoir from accidental compression or injury and that by removing the intermediate tube 6 the reservoir will be accessible for repair or renewal.

It will be obvious that the pressure-bar herein described may be constructed in many ways, and I do not restrict myself to the specific construction, as modifications and changes may be made without departing from the spirit of the invention.

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

1. The combination with a body portion carrying a pen-point, of a compressible reservoir attached thereto, a pressure-bar extending longitudinally of the reservoir, and a spring-tongue to which the pressure-bar is rigidly attached for withdrawing the pressure-bar after compressing the reservoir whereby the pressure-bar is withdrawn by the spring-tongue, substantially as described.

2. The combination with a body portion carrying a pen-point, of a compressible reservoir attached thereto, a tube surrounding said reservoir, a pressure-bar within the tube extending longitudinally thereof, and a spring carrying said pressure-bar and adapted to withdraw it, substantially as described.

3. The combination with a body portion carrying a pen-point, of a compressible reservoir attached thereto, a partially-cut-away tube surrounding said reservoir, a spring projecting into said cut-away portion, and a pressure-bar mounted on said spring and extending longitudinally of the reservoir, substantially as described.

4. The combination with a body portion carrying a pen-point, of a compressible reservoir attached thereto, a tube having a spring-tongue at one end, surrounding said reservoir, a pressure-bar within said tube adapted to compress the reservoir, and an outer tube adapted to slide over said spring-tongue and be retained thereby, substantially as described.

5. The combination with a body portion having a pen-point, of a compressible reservoir attached thereto, a pressure-bar extending longitudinally of the reservoir, and a spring attached to the middle portion of the pressure-bar, substantially as described.

6. The combination with a body portion carrying a pen-point, of a compressible reservoir attached thereto, means whereby the reservoir may be compressed, a tube having a spring-tongue at one end surrounding said reservoir, and an outer tube adapted to slide over said spring-tongue and be retained thereby, substantially as described.

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

ROBERT A. HAMILTON.

Witnesses:

S. HART CULVER,

RUTH M. SCHOFIELD.