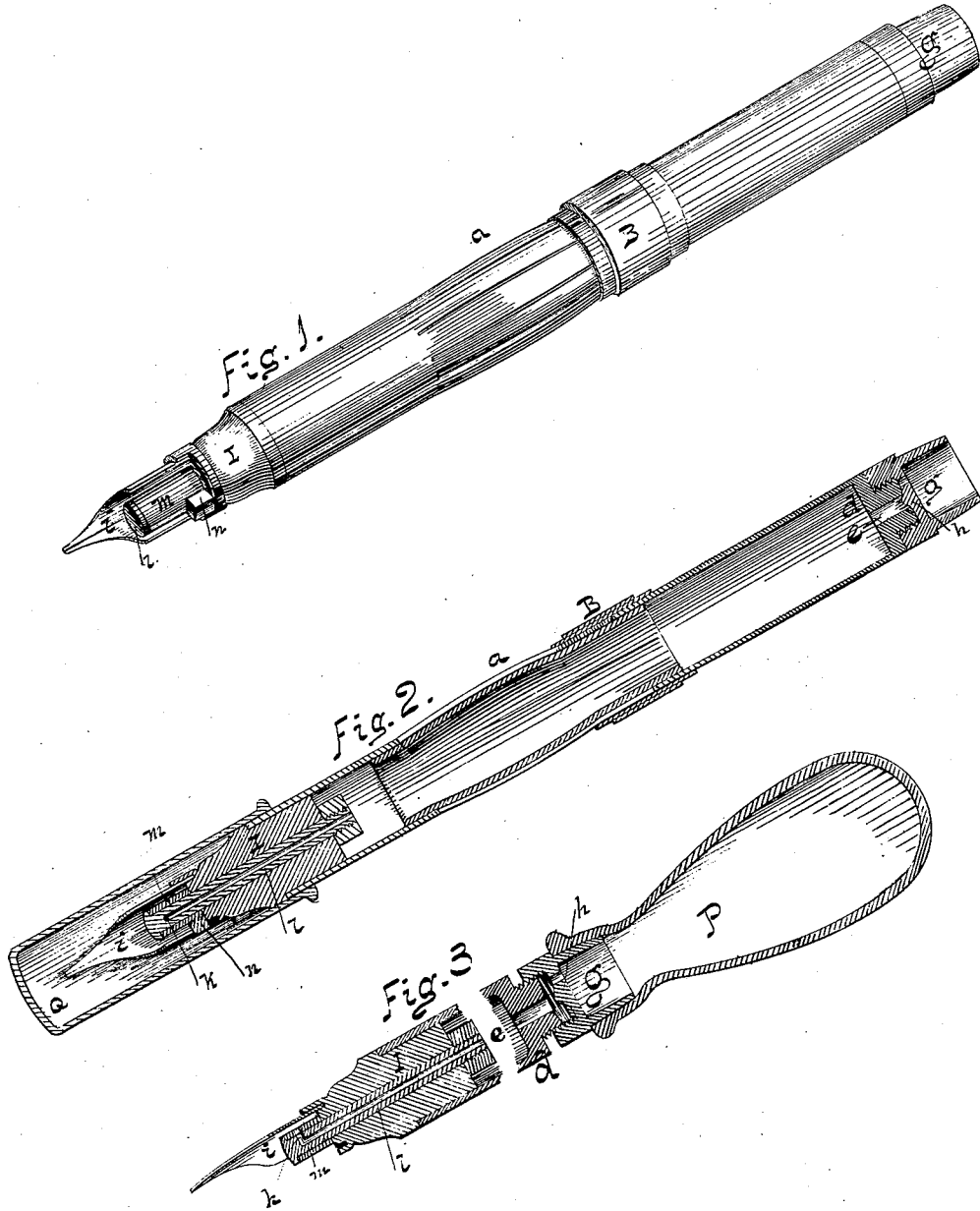


W. W. STEWART.  
Fountain Pen-Holder.

No. 206,200.

Patented July 23, 1878.



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# UNITED STATES PATENT OFFICE

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## IMPROVEMENT IN FOUNTAIN-PEN HOLDERS.

Specification forming part of Letters Patent No. 206,200, dated July 23, 1878; application filed June 20, 1878.

*To all whom it may concern:*

Be it known that I, WILLIAM W. STEWART, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Fountain-Pen Holders, of which the following is a specification:

This invention relates to that class of pen-holders known as "fountain" or "ink-containing" holders, because the interior of the holder constitutes a reservoir for liquid ink, which, during the act of writing, is fed to the pen either automatically or at the will of the writer.

The present device belongs to the latter subdivision; and consists, first, in a device for graduating at will the elastic resistance of the wall of the ink-reservoir, so as to adapt the same to the pressure exerted by the fingers of the user; secondly, in the peculiar structure of the vent-plug.

That others may fully understand my improvement, I will particularly describe the same, having reference to the accompanying drawings, wherein—

Figure 1 is a perspective of my holder, greatly enlarged. Fig. 2 is a longitudinal section of the same. Fig. 3 is a section of the exhaustion-bulb used in filling the reservoir, and of the vent-plug.

The holder is made hollow, and its interior forms the reservoir for ink. It may be constructed of any proper material, vulcanized india-rubber being, perhaps, preferable to all others. To enable the writer to force the ink from this reservoir down to the pen at will during the act of writing, the barrel is made flexible at some part of its length, so that it may be compressed from time to time by the fingers in writing, and the ink thereby forced out to charge the pen. To this end the barrel is preferably constructed with a number of parallel longitudinal slits, extending, say, one and one-fourth inch, or thereabout, along the central part of its length, and a tube of soft rubber is placed within said barrel to cover said slits, so that the ink is prevented from escaping thereat. When the pen-holder is in use, the slit portion is naturally pressed against the forefinger, and the act of managing the pen in writing causes a series of compressions

and relaxations of the flexible portion mentioned, varying in intensity according to the habit of the writer, and, if unregulated, the feed of ink correspondingly varies. Heretofore the only corrective for this defect consisted of a variety of holders varying in stiffness, so that the purchaser was required to select a holder suited to his hand, or learn to control his hand according to the resistance of the holder.

The first part of my invention has for its object to correct this objection and enable the writer to adjust the elasticity of the holder to his habit, and thus make it unnecessary to construct the holders in variety.

Without confining myself specifically to the method shown, I will confine my description to that method for convenience, because it is evident that it may be greatly varied in method without in the least changing the new effect which forms the basis of my invention, and which I design to cover broadly.

The section of the barrel which is slit, as shown at *a*, is also slightly expanded and the slits spread, so that elasticity extends over the entire length of the slit portion, and may be diminished by a ring or slide, which, when drawn over the barrel, serves to practically shorten the slits and diminish the length of the elastic portion, and correspondingly increase the stiffness and power of resistance of that part of the holder. Such a slide is shown at *B*. It enables the possessor to adjust the holder exactly to his "habit," so that without effort, and unconsciously on his part, the ink will, in the act of writing, be fed to the pen exactly as fast as required; and when the pressure is entirely relaxed at the conclusion of the writing, the expansion of the holder sucks the surplus ink away from the pen again.

When the pen is not in use it is necessary to guard against leakage and against any accidental discharge of its ink.

At the upper end of the barrel there is a diaphragm, *d*, having a small central hole, *e*, through which air is moved, either to discharge the contents of the reservoir or to charge the same, and above said diaphragm a section, *g*, of the holder, which is connected to the barrel by a screw, and is provided with

a central conical plug, *h*, which, when said section is screwed home, acts as a valve to close the diaphragm and prevent the escape of air. When the holder is charged, or whenever it is in use, this section is screwed down tight, so as to close the diaphragm. At the lower end a removable plug, *I*, is inserted, and said plug is provided with a socket for the pen *i*, and with a valved discharge-hole, through which the ink is discharged upon the inner side of the pen. For the purpose of accuracy I construct this plug of four parts, as shown. First, the plug proper, which may be fitted to hold by friction or by screw, as desired; but friction is sufficient practically. This plug is bored centrally, and a tightly-fitted hollow stem, *l*, inserted and secured there by a small nut.

A head is formed on the outer end of the stem, and a turning-sleeve, *m*, fitted between the head and the outer end of the plug. Said sleeve is provided with a laterally-projecting boss, *n*, which rests in a notch in the end of the plug, said notch being larger than the boss, so as to permit the sleeve to rotate through an arc of, say, ninety degrees. While placed in position at one extremity of its rotation, a small drill is passed through both sleeve and stem until the hollow of the latter is penetrated, so that the sleeve becomes a rotating valve, to open the passage for the escape of the ink when in one position and close it when in another.

When the section is screwed home and the ink-vent closed the reservoir is closed against the escape of ink.

When the reservoir is to be filled a flexible india-rubber bulb, *P*, is employed to exhaust the reservoir and cause the ink to flow in by atmospheric pressure. The bulb is attached

to the upper end of the handle and the head unscrewed to a small extent, so as to open the air-passage in the diaphragm. The ink-vent is also opened by turning the sleeve. The bulb may then be squeezed to expel the old ink from the reservoir, or it may have been exhausted in that way before unscrewing the cap. When the bulb has been exhausted the lower end of the holder, with the ink-vent open, is dipped into the ink, and the bulb is then suffered to expand, and by exhausting the air within the holder atmospheric pressure compels ink to flow in and fill the holder.

Those holders designed for pocket use are provided with a cover or hood, *Q*, for the pen, so that it shall not be injured in the pocket.

Having described my invention, what I claim as new is—

1. An ink-holding or reservoir pen-holder with an elastic section, combined with an adjusting-slide bearing upon said elastic section, to adjust its elasticity to suit the habit of the user, for the purpose set forth.

2. An ink-holding or reservoir pen-holder with walls divided by longitudinal slits, so as to become elastic, combined with a movable band or ring, to regulate and adjust the elasticity of said wall, in the manner and for the purpose set forth.

3. The removable plug for the lower end of the reservoir, provided with the hollow central pin, secured by a nut and a rotating collet, provided with a stop to limit its rotation, and perforated, as described, to constitute a gate or valve for the ink-vent, as set forth.

WILLIAM W. STEWART.

Witnesses:

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J. C. RION.