

D. MACKINNON.
Stylographic Fountain-Pen.

No. 217,888.

Patented July 29, 1879.

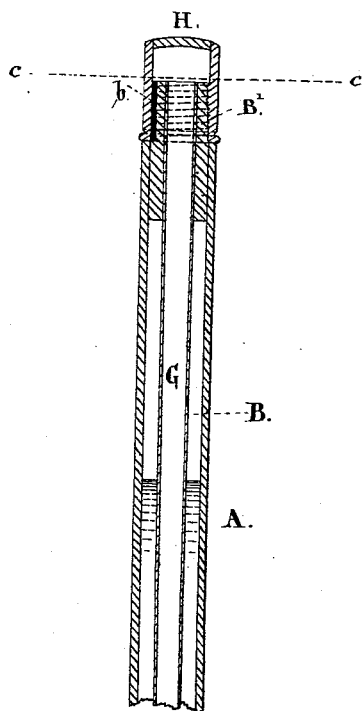


Fig. 1.



Fig. 2. at a, a.



Fig. 3. at b, b.

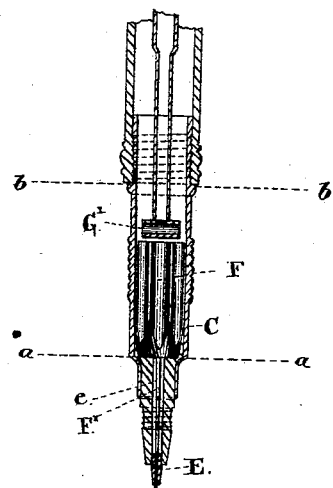


Fig. 4.

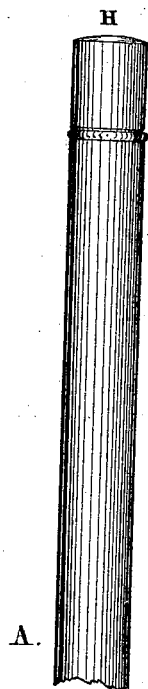


Fig. 5.

Witnesses.

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UNITED STATES PATENT OFFICE.

DUNCAN MACKINNON, OF STRATFORD, ONTARIO, CANADA.

IMPROVEMENT IN STYLOGRAPHIC FOUNTAIN-PENS.

Specification forming part of Letters Patent No. **217,888**, dated July 29, 1879; application filed March 7, 1879.

To all whom it may concern:

Be it known that I, DUNCAN MACKINNON, of the town of Stratford, in the county of Perth, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Stylographic Fountain-Pens; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, and to the letters of reference marked thereon, forming a part of this specification.

My invention has relation to certain improvements in a stylographic fountain-pen for which a patent was granted me March 21, 1876, No. 174,965; and the said invention consists, first, in forming or constructing the air-supplying tube with a closed lower end, and providing lateral openings therein for the escape of air, instead of having the same open, as in my patent above referred to, whereby the entering of ink into the air-tube by the action of the valve or otherwise is prevented; second, in a peculiar combination and arrangement of the parts, all as and for the purpose hereinafter more fully and at large will appear.

Referring to the drawings, Figure 1 is a vertical sectional view; Figs. 2 and 3, sectional plans; Fig. 4, a sectional plan of the valve, and Fig. 5 an exterior view of a stylographic fountain-pen embodying my improvements.

A represents the pen, composed of ink-reservoir B, point-holder C, and writing-point E. The point-holder in this case is centrally perforated with a parallel or straight-sided ink-duct, *e*, instead of tapering, as in my patent of March 21, 1876, within which the valve-spindle F' works, and at the top of which duct, within a suitable chamber formed in the part C, the valve F is placed. The writing-point consists of a small detachable metallic cylinder, tapering on the outside, secured within the ink-duct at the end of the pen and projecting therefrom a suitable distance. The writing-point is also centrally perforated, but with a much finer hole than the point-holder, through which hole the valve-spindle passes, projecting beyond the end of the point.

As will be seen by reference to the drawings, the valve-spindle is made tapering, and

to fit sufficiently close within the bore of the point as not to stick, yet to prevent the flow of ink past the same when it is down in place. By this means the ink is not only prevented from escape by the action of the valve F, but by the spindle F' also, and at the extreme end of the pen.

The valve F, as shown in Fig. 4, is made with corrugated sides, in order to enable it to fit tight within the chamber in the point-holder C, but at the same time permit a free egress of ink around the same. By this means the valve is prevented from lateral displacement from its seat.

G is the air-tube, extending from the top of the ink-reservoir downward, terminating at a point a short distance above the head of the valve F, closed at its bottom, and provided with one or more small lateral openings, G'. The lower end of this air-tube, with relation to the valve F, is such that a stop is formed and the upward movement of the valve limited, and the same prevented from accidental displacement on the inversion of the pen. The air-tube, for a suitable distance above the end, is reduced in size and diameter from the general size of the remainder of the tube, with the object of allowing sufficient space for the ink to flow downward into the valve-chamber.

The object of closing the air-tube at the bottom and providing lateral openings is because it was found in practice with my pen as patented March 21, 1876, that the ink, by reason of the constant motion of the valve, was forced or pumped up into the air-tube, and when the pen was inverted escaped through the top. The free action of the pen was somewhat impaired by reason of the presence of ink in the air-tube, and the impinging of the valve against the bottom of the tube closed the same, thus making the supply of ink irregular.

The admission of air into the interior of the reservoir is accomplished by flattening one side, *b*, of the reduced end B', on which the screwed capping-piece H fits. When air is required, the cap is simply raised from its seat, exposing the mouth of the channel formed by the flattened side. This provision for the admission of air is only a modification of the

construction shown in my said patent of March 21, 1876, and no claim of invention is laid thereto in this case.

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

1. In a stylographic fountain-pen, in combination with the reservoir B C, the air-tube G, terminating within the reservoir at a point near the top of the valve, closed at the bottom, and provided with one or more lateral openings, substantially as and for the purposes described.

2. The combination, in a stylographic fountain-pen with a reservoir-handle, containing the ink, and air-supplying tube, terminating

at the lower interior portion of the reservoir in close proximity to the valve, closed at its bottom end and provided with lateral openings, of a valve for governing the flow of ink from the pen.

3. The combination and arrangement, in a stylographic fountain-pen, of reservoir-handle B C, air-tube G, closed at the bottom and provided with lateral openings G', corrugated valve F, and spindle F', substantially as and for the purposes described.

DUNCAN MACKINNON.

Witnesses:

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A. MACKINNON.