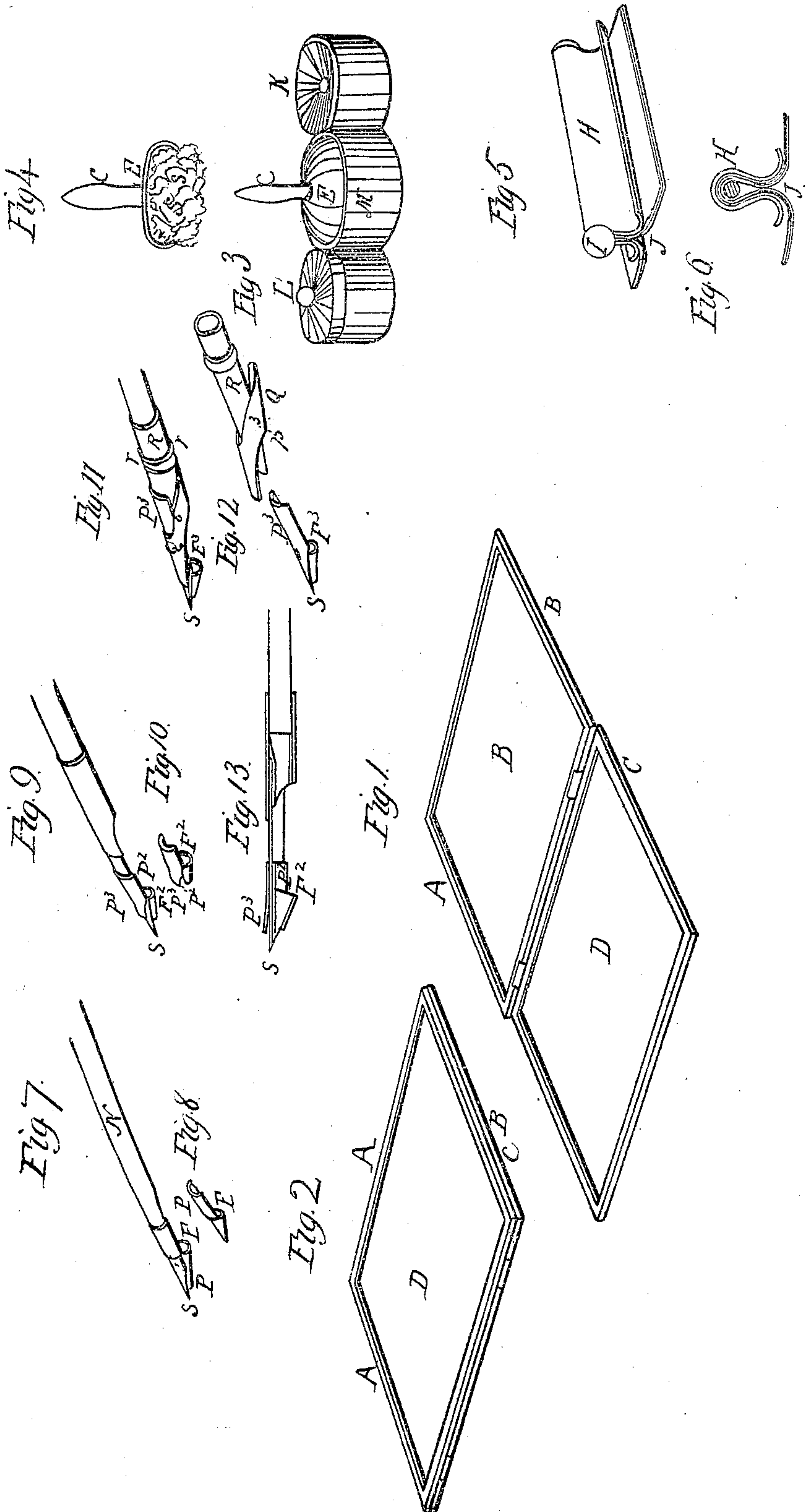


W. Davison. Pen

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UNITED STATES PATENT OFFICE.

WILLIAM DAVISON, OF BALTIMORE, MARYLAND.

ART OF WRITING BY A CONSTRUCTION OF FOUNTAIN-PEN ADAPTED TO WRITING ON
A GUIDE FORMED OF GROUND GLASS, &c.

Specification of Letters Patent No. 2,287, dated October 9, 1841.

To all whom it may concern:

Be it known that I, WILLIAM DAVISON, of the city of Baltimore and State of Maryland, have invented a new and Improved Method of Teaching the Art of Writing and in the Implements Used Therein, which are described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a view of the guide or copy holder as opened to receive the copies. Fig. 2 is a view of the guide when closed and ready for use. Fig. 3 is a view of the sponge holder and inkstand. Fig. 4 is a section of ditto. Fig. 5 is a view of the guide drier. Fig. 6 is a section of ditto. Fig. 7 represents a common goose quill pen with a metallic fountain attached to it. Fig. 8 the metallic fountain detached from said pen. Fig. 9 represents a metallic fountain and pen combined. Fig. 10 represents the fountain detached from the pen. Fig. 11 represents the pen and fountain attached to a pen holder by a hinged concave plate and ring. Fig. 12 represents the ring hinged plate, pen and fountain, detached the one from the other. Fig. 13 vertical longitudinal section of the pen represented in Figs. 9 & 10.

Similar letters refer to corresponding parts.

The nature of my improvement consists in writing upon the surface of ground glass with a pen of peculiar construction prepared with fine chalk so as to render smooth the surface, prevent the spreading of the ink and give perfect legibility to the writing, arranged and secured in a peculiarly constructed hinged metallic frame which folds upon a metallic back or plate B in the manner of the covers of a book between which frame C and back B are placed a series of systematic exercises or copies under said glass D the pen with which the ink is laid upon the glass being of a new and peculiar construction making the finest hair as well as the boldest line and having attached to it a fountain of ink which fountain being in the form of a funnel, and when filled, which is effected at every dip of the pen answers for a page of writing, said pen being so constructed as to prevent a too rapid flow

and consequent spreading of the ink. Also having a guide drier so constructed that in using it the hand is protected from rubbing on the glass and so that it can be taken out at pleasure to be washed, &c. Likewise in having an inkstand made in such a manner as to hold ink, sponge, and water in a very convenient manner. The said sponge holder being made of metal in such a manner as to hold the sponge by compression and fitting into said inkstand.

The guide or copy holder A, Figs. 1 and 2.—The material of which the guide or copy holder A is made, and the manner of making it are such as to admit all the copies or sheets of exercises between the glass D and the back B of the copy holder and yet be no thicker than an ordinary copy book. The back B is made of thin sheet brass or any suitable material of a rectangular form, to which is hinged a light brass frame C for holding the glass D and the copies placed between said glass and the aforesaid plate or back B to which it is clasped after the copies are inserted. The glass D upon which the exercises are written is about one-fourteenth of an inch thick of the size of the frame C in which it is fitted and ground down in the finest manner with fine silica. The thickness is specified because if too thick too much refraction is produced, and if too thin it is liable to break and bring the guiding surface too near the copy so as to make it an operation like tracing letters upon paper which is not the intention of the inventor. The glass D is set in the frame C before mentioned with copal varnish or white lead so as to render the joints tight and altogether impervious to the passage of water from the surface of the glass, through said joints, to the copies beneath it. Before writing upon the glass the surface is prepared by first being dampened and then slightly rubbed with fine chalk; while yet damp the drier is applied to the surface and rubbed until perfectly dry. It is then in a fine state to be written on.

The sponge holder, Fig. 4.—This is made of thin metal in the form of a hollow sphere with a segment cut off forming an opening to the interior through which the sponge S is inserted and having a handle G project-

ing from its opposite side by which it is managed. The edges around the opening are turned inward so as to hold the sponge when pressed into it.

5 *The guide drier H*, Fig. 5.—This is made of tin, resembling a cylindrical case, with curved wings, bent in a cylindrical manner, to receive a roller, around which folds of cloth are wound, and then bent outward from the cylinder on either side to form guards for the fingers of the hand to rest in as represented in Fig. 6 which is an end view, so that in forcing the roller and cloth into said cylindrical case the guards or
10 curved wings will be forced outward from each other and leave a space sufficient for the roller and cloth to pass through, which roller and cloth having passed through the said wings will close or approach each other and
15 assume their former position—the said drier can thus be taken out at pleasure from the case to be washed, or for the insertion of another cloth by simply extending the curved wings or guards of the cylinder as before described.

20 *The inkstand*, Fig. 3.—This is made of three parts—that which is lettered K contains ink, L contains water, and M the sponge holder. L is a movable cup for water to wash the pen and damp the sponge.

30 *The fountain pens*, Figs. 7, 8, 9, 10, 11, 12.—The fountain pen used upon the guide or upon paper represented by Figs. 7 and 8 is made in the following manner. From a funnel shaped fountain F extends a segment plate P which is folded over on the back on either side so as to form a sheath or socket into which the pen is inserted which is pushed down until the nib comes below the
40 lower end of the fountain and until the latter comes against the split of the pen—the aperture at the lower or smaller end of the fountain at which the ink discharges being of an oval shape next the split of the
45 pen. This fountain and plate can be taken off and attached to another pen at pleasure, always placing it in the concave part of the nib. The ink flows in the act of writing by which it is regulated in its descent, causing it
50 to flow faster or slower according to the movement of the nib. After the fountain F is filled it must be moved or thrown suddenly back into ink stand two or three times before writing, which exhausts and sends the ink
55 into the lower end of the funnel and in contact with the nib. The movement of the nib of the pen causes a constant flow of ink from the fountain. In making heavy lines the nib is pressed on more heavily by the writer and
60 of course extends the nib from the fountain which cuts off the direct flow of ink and causes it to ascend by capillary attraction, between the outside of the fountain and the inside of the nib of the pen and then descends
65 through the split upon the surface of the

glass or paper. As the parts of the nib close toward each other to make fine lines they also approach the fountain and force the surplus ink up into the fountain by compression. In writing upon paper with this fountain attached to the pen one dip only is required to write two pages.

A fountain pen exclusively for the glass guide. See Figs. 9 and 10.—A concave segment plate P² of the curvature and size of the concavity of the nib of the pen, to which it is to be applied is brazed upon the back of the fountain F extending above its top about a third of an inch and below it about the 20th of an inch for conducting the ink more effectually to the nib. Parallel with the aforesaid plate P² and to the edges of the same is brazed another concave plate P³ at such distance therefrom as to have a space between the two plates forming a sheath for the insertion of the pen whose nib extends below the lower end of the first mentioned or inner curved plate P². The sheath for the pens attached to the fountain may be formed by folding a thin sheet of metal and bringing their ends together and then molding them to a form to correspond with the shape of the pen which is inserted into the space between the folds of said plate—the fountain being fastened in the concavity of the inner folds so as to bring its upper end about 1/4 of an inch below the upper end of the sheath and its lower end about 1/20 of an inch above the lower end of the sheath. The outer curved piece P³ of the sheath is raised or extended at the lower end from the inner one P² to allow space sufficient for the movement of the nibs of the pen which is placed between said segments of metal. The fountain F² is filled at a single dip as before described. The ink descends to the point of the nib for fine lines. In bearing more heavily upon the pen the nib is sprung from the inner plate P² which causes the ink to ascend between the convex surface of the inner plate and the concavity of the nib, to the top of the slit of the nib, down which it descends to the surface of the glass upon which the writing is performed and makes the heavy lines with but a slight flow of ink. The outer plate or segment against which the nib is pressed prevents the pen from springing too far outward. In the nib returning to the fountain the ink again flows to it.

Fountain pen for the glass guide. See Figs. 11 and 12.—Between a metallic clasp Q hinged to the handle R by the pin p and said handle R the pen P³ and fountain F³ are inserted. By closing the said hinged clasp Q and slipping a ring r over the end of the hinged clasp the pen and fountain will be held securely in their places. By moving the pen and fountain upward or downward between said hinged clasp and handle the

elasticity of the pen is so acted on by the hinged clasp as to make it stiff or limber to suit the writer.

5 What I claim as my invention and which I desire to secure by Letters Patent is—

1. The combined employment of a guide as aforesaid with a fountain pen of the construction as described.

2. I do not claim as my invention the attaching of a reservoir to metallic pens for affording a supply of ink as reservoirs have been applied to the backs of metallic pens; but what I claim as my invention is combining the reservoir with the concave side of the pen by attaching a separate sheath to the back of the reservoir or fountain into which the pen is inserted, substantially as set forth by means of which arrangement the escape of the ink is prevented on the downward stroke of the pen as by the pressure upon it the surface of the pen is removed from the fountain or reservoir, while

in the old arrangement the pressure had the effect of opening the nib and by bringing it nearer the reservoir increasing the flow of ink. 25

3. I also claim the employment of chalk on the surface of the ground glass as described for the purpose of producing a whiteness on the surface, rendering the writing upon the surface more apparent and preventing the ink from spreading and rendering the surface more like paper. 30

4. I likewise claim the method of employing sponge in a condensed form by combining it in the manner described with a holder constructed as set forth. 35

5. I also claim the combination of the case H—roller I and wiper J as described.

WILLIAM DAVISON.

Witnesses:

WM. P. ELLIOT,
OLIVER DANSON.