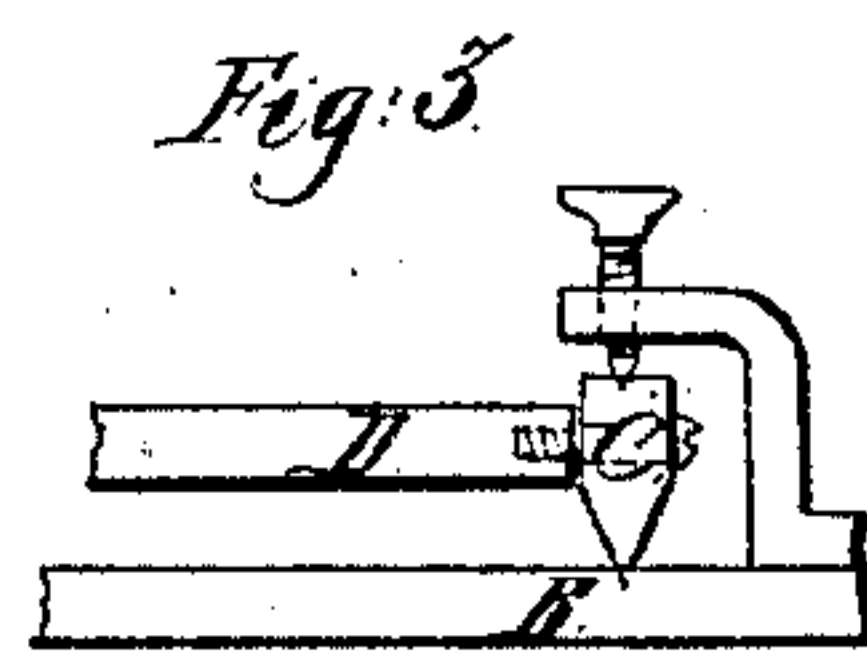
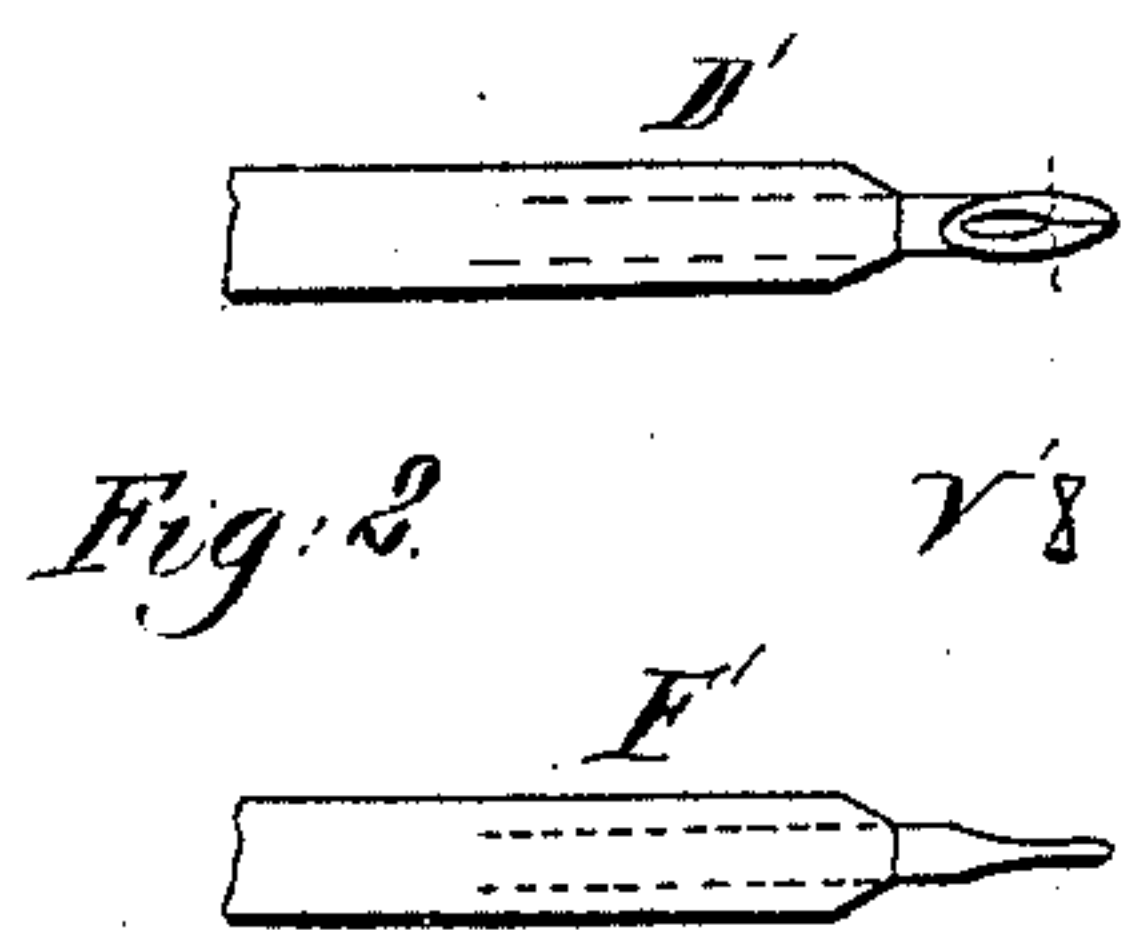
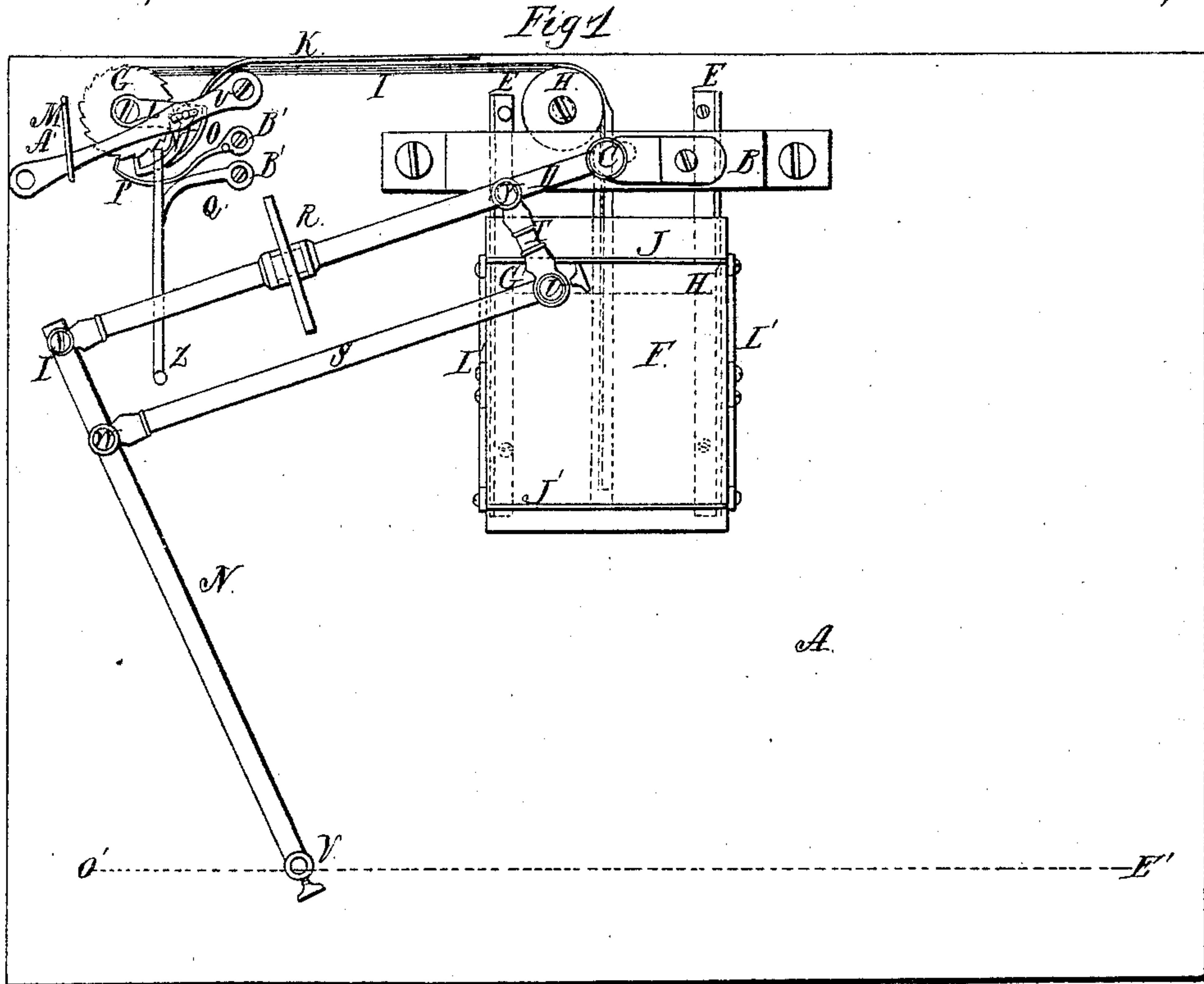


*C. Thurber,*

*Penmanship,*

*Nº 17,647.*

*Patented June 23, 1857.*



*Inventor:*  
*Cha<sup>s</sup> Thurber,*

# UNITED STATES PATENT OFFICE.

CHARLES THURBER, OF WORCESTER, MASSACHUSETTS.

## CALLIGRAPH.

Specification of Letters Patent No. 17,647, dated June 23, 1857.

*To all whom it may concern:*

Be it known that I, CHARLES THURBER, of the city and county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in a Machine for Writing, termed a "Calligraph;" and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, in which—

Figure 1 shows a top or bird's eye view of the whole. Fig. 2 shows two views and a cross section of the pen. Fig. 3 shows a front view of the double joint at *c* and some of the adjacent parts; the same parts being indicated by the same letters where they occur in each.

The application of machinery to the purpose of writing or enabling persons to give their thoughts a permanent form by the use of type or by a pen receiving the motions to form similar letters has at various times been made and also the use of two or more pens to produce duplicates, etc., of one's writing. My invention differs essentially from these—from the former in always giving the peculiar form of making and connecting the letters, called the style of the person's writing, and doing this so faithfully that it can be recognized to the minutest particular, and from the latter in allowing the writer to form large letters, therein being adapted to a large class who from debility or other cause can not command the motions of the fingers or carry the hand steady enough to form a small hand, or who may have lost their fingers or even the hand, enabling them to write a small clear hand with facility, the motions being given by the arm or other means, each letter in writing being formed by the motions made by the operator, transferring them to the paper with accuracy simultaneously with their production and requiring very little or no effort.

To construct my invention or calligraph as I have termed it, A in the drawings represents the table or desk with an elevated piece B to support the joint at C on the end of the rod D.

E, E, are two ways to form a slide for the tablet F on which the paper or book is placed and firmly held.

At G is a ratchet wheel to which the cord I is attached from whence it passes around the guide pulley H and thence to near the lower

edge of the tablet F to which it is fastened, the piece B being elevated in its central part sufficiently to allow the tablet and paper or book to pass freely under it. Across the tablet are arranged the rods, J', J', attached to cams at their ends turning on pivots with springs L', L', to keep the rods pressed to the surface of the table.

J is a lever to operate the ratchet G by means of the piece L (with its catch N and spring O) turning on the center of G and having a pin projecting into a slot in the lever J which is pivoted at one end and at the other A' has a stud rising to a level with the rods D and N'.

M is a guard to control the extent of motion of the lever J and K is a spring to return it to place or position shown in the drawing.

P is a spring stop to prevent a backward motion of the ratchet G.

Q is a releasing lever hung at B' having a pin projecting over the stop P and catch N so that by moving it by its handle at Z it moves both from the ratchet G allowing the tablet F to be moved back.

D, S, T, and N' are light tubular rods jointed at X, U, Y, and W, the distances C Y, Y U, and X W, being equal, or nearly so and of any desired proportion of the rods D and N' (which should be about equal) though I prefer about one sixth or fifth as most convenient. The rod D has a double joint at C, as shown in Fig. 3, so as to turn freely on its own axis and also around C, thus giving perfect freedom to the stylus at V in the end of the rod N' to move in any direction. On D is placed a light wheel R moving freely, to support the weight of the rods, or the joint at C may be made to support them. At U is placed the pen two views and a section of which are shown at Fig. 2 on an enlarged scale, D' showing the cavity of one side (the other being similar) the former of the outside, point, and the split, and F' the shape at right angles thereto, V' showing a cross section at the place indicated by the dotted lines across D', the pen being held at U by an adjustable screw. At V is placed a stylus of such form as to be conveniently grasped by the fingers or moved by the operator.

In this construction I wish to be understood as making A either separate to be laid on a desk or table or the other parts may be applied to an ordinary desk or table to take its place.



The operation: After placing the paper on the tablet under the rods J' J' to keep it smooth in place, and supplying ink to the pen (which may be done by making the upper part thereof a fountain or by having a reservoir near it and a small tube leading to it) to fill the cavities shown, move the stylus V over an imaginary line of letters along O', E', and the pen at U will form the same on the paper along the line G', H', on a reduced scale of one-sixth beforementioned, and on arriving at E' the stylus is lifted and brought back to O', from whence being moved toward A' the rod N' moves the lever J by its stud at A', turning the ratchet wheel one notch, which is so proportioned as to draw the tablet up the space for one line, and then the stylus is brought down and is ready to form or write another line, it being moved lightly over the surface of A, the pen being adjusted or set by its screw to then bear lightly on the paper or book, and when the paper is filled or the writing finished, by moving the lever Q it releases the ratchet and allows the tablet to be moved back and the paper is easily removed. Any form of flourishing or figuring made along or near the line will be correctly transferred to the paper by the pen, the peculiar construction of which enables it to write in any direction on the paper, always moving parallel and in proportion to the motion given to the stylus.

I am aware that the parallel motion of the pen and the principle of reducing the size are not new. These I do not claim of themselves, but only in connection with the other parts, my invention being essentially different from all others for similar purposes in that it gives complete command over both pen and paper, forming separate lines by the pen although the stylus is moved over the same one repeatedly. The imaginary letter or that made by the stylus being large is much better formed and what little inaccuracies there may be made being reduced so much (to one-sixth or thereabout) can hardly be noticed, and the writing the large hand is found to be much easier, the operator being enabled to write a much greater length of time, and the nervous, infirm, and even the blind enabled by my invention to write with great freedom and without fatigue, after very little practice.

I do not wish to be understood as making

claim broadly to the combination of two pens or markers by levers of equal length and jointed rods and these features combined with a table or desk by universal joints, as such combination has long been known and used in an instrument termed a polygraph for writing two exact copies simultaneously and has been entirely superseded by the copying press for taking impression copies; and the mode of operation resulting from the said combination is substantially different from my said invention and could not produce the results for which my said invention was designed; nor do I wish to be understood as making claim to the combination of a stylus or tracer with a pen or marker by levers of different lengths connected by jointed rods, as such a combination has long been known and employed as a pantograph for copying drawings so as to reproduce them on an enlarged or reduced scale, and could not alone achieve the purpose for which my said invention was designed; but

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

1. Combining a stylus or tracer with a pen or marker by means of levers of different lengths connected by jointed rods substantially as described that the pen or marker may follow accurately, but on a reduced scale all the movements imparted to the stylus or tracer, in combination with the connection of this mechanism with a desk or table by means of a universal joint, substantially as described to give freedom of motion in all directions to the stylus or tracer and to the pen or marker, whereby a person can write the usual sized characters by tracing characters of a large size as set forth.

2. I also claim the stylus or tracer and the pen or marker combined substantially as described, with the apparatus or its equivalent for shifting the paper, whereby the paper is shifted to the distance equal to the space between two lines by carrying back the stylus or tracer preparatory to tracing another line substantially as set forth.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

CHARLES THURBER.

Witnesses:

PETER VAN ANTWERP,  
JAS. G. ARNOLD.