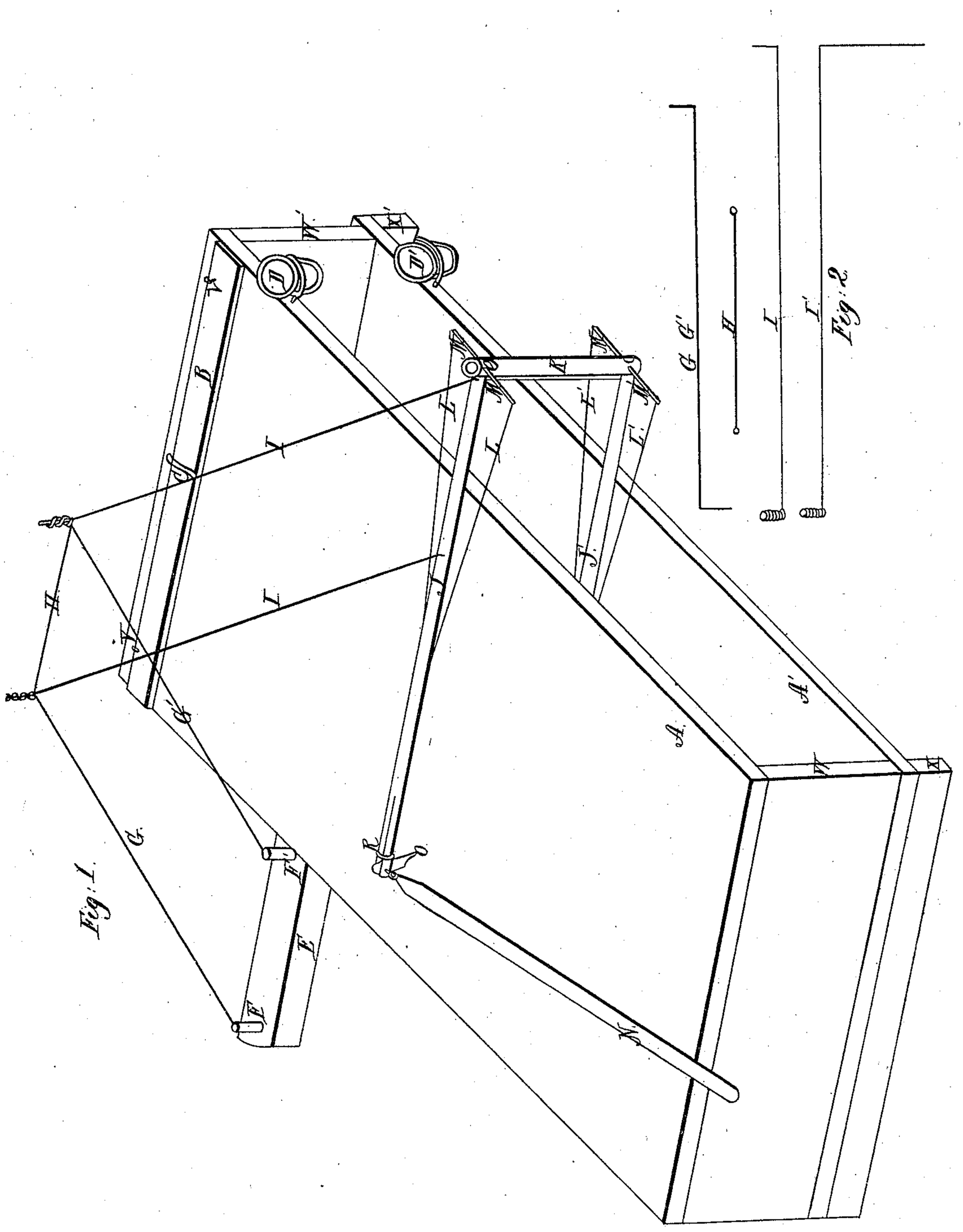
N. AMES.

POLYGRAPH.

No. 12,049. Patented Dec. 12, 1854.



# UNITED STATES PATENT OFFICE.

NATHAN AMES, OF SAUGUS, MASSACHUSETTS.

## POLYGRAPH.

Specification of Letters Patent No. 12,049, dated December 12, 1854.

*To all whom it may concern:*

Be it known that I, NATHAN AMES, of Saugus, in the county of Essex and Commonwealth of Massachusetts, have invented a new and useful instrument which I call a "Polygraph," for Writing Two or More Letters Simultaneously and for Copying Drawings and Pictures; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters and figures of reference marked thereon.

Figure 1, is a perspective view of the instrument, in which A A′, are thin tables of wood, slate, or other material, about 14 inches long by 8 inches wide, on which the sheets of paper are placed for writing, drawing, or copying. The distance between these tables is about one inch and a half. The upper table is supported parallel with the under by the end pieces, W W′. The under table is also elevated about an inch by the strips, X, X′. The end piece, W, is nailed to A, but is so fastened to A′, by pins or a hinge, that W′ (which is nailed to A) may be raised a small distance from A′, so that the top of a sheet of paper may be slipped between them and held in place by the weight of A. There are also sharp points in the bottom of W′, to hold the paper more securely from sliding.

B is a thin strip of metal attached to A, by the hinges V V, for confining the paper.

C is a stiff wire bent at right angles, one end entering a hole in A, and the other made to bear on B. This wire may be turned horizontally either to the right or left, in order that B may be turned upon its hinges.

When it is desirable to preserve the duplicate of any letter or other document in a blank-book, the right side of the book is slid under the left side of the under table, A′. The blank leaf to be written on, is then turned over on to the top of the under table and confined in the same manner as a common sheet of paper described above.

It is also obvious that three, or more, tables, if desirable, may be arranged, one above the other, in the same manner as two.

D D′ are small, shallow inkstands, attached to the tables, one directly above the other, by means of wire staples driven into the edges of A and A′.

E is a square stud about three inches long, fastened to the under side of the upper table, its upper surface being level with it.

F F′ are metallic tubes running through the stud, E, and projecting above it about one fourth of an inch.

G G′, H, and I I′, are iron or steel wires, shaped as indicated by the same letters in Fig. 2. The lower ends of the wires, G G′, turn freely in the tubes, F F′.

H fits on over the upper ends of G G′, being as long as the distance between F F′. The upper ends of the wires, I I′ also fit on over the upper ends of G G′, while the lower ends of the same enter the pen holding fork, J, as seen in Fig. 1. I′ also runs through J′. All the joints of these wires should be close, but made to play with as little friction as possible. Their design is to support the forks, J J′ and the apparatus connected with them, at a proper distance from the tables; to allow the pens to move in any direction over the tables, and to keep the forks, J J′, parallel with the ends of the tables. Instead of these five wires, two may be made to answer, by changing the position of the stud, E, so as to project from the upper right-hand corner of the table, A, and placing G′ into the tube F—thus dispensing entirely with G, H and I. In this case, however, the forks, J J′ will not always be parallel with the ends of the tables. This also turns the pens; and for that reason I prefer using all the five wires.

J J′ are metallic tubes about an inch longer than the width of the tables, A A′. One end of these tubes is made fast in the hollow metallic cylinder, K, and braced by means of the short stiff wires M M′, and the small long wires L L′. If more than two tables are used, there should be the same number of prongs fastened into K, in the same manner as J J′.

N is the handle attached to J, by a universal joint, so that it may be turned at any angle with the surface of the table, A, independently of the pens.

O is a common steel, or gold, pen put into a semicircular hole in the slit at the end of J, and held fast by the sliding ring, R. The pen in J′ is held in the same manner; it is however of a different construction from that of the upper one, being a large fountain

pen capable of holding several times as much ink as the pen above it in J. As the under pen works out of the writer's sight, it is highly important that it should never fail of being well supplied with ink; and this is effected by having it a fountain pen, while the upper one, in J, is a common pen.

*Methods of operating.*—Place the sheets of paper on the tables and confine them there, as described above, observing always, whether large or small sheets, to put their left edges on a line with the left edges of the tables. Take the handle, N, holding it and moving it, in the same manner as you would a common lead pencil. As any motion, horizontal or perpendicular, given to the upper pen, will also be communicated to the under pen, or pens, it is obvious that two or more copies will be produced simultaneously with the original. In case the upper sheet is ruled, it will be better not to rule the under sheet, or sheets, as this will save time in arranging all the sheets so that all the pens shall follow the lines.

For copying drawings and pictures, the original is placed on the upper table, A, and the material for receiving the copy is placed on the under table, A′. Then, having a pencil, or a pen supplied with ink, in the under prong, J′, follow the outlines of the original with a dry pen or pointer in the upper prong, J, and it is obvious that an exact copy will be produced.

I do not claim in this instrument the supporting and guiding wires, G, G′, H, and I, I′, but

What I claim as new and my invention in this instrument, and desire to secure by Letters Patent is—

1. Arranging two or more tables, one above the other for the purpose of writing simultaneously on two or more sheets of paper, as described.

2. Arranging two or more pens, one above the other, in the ends of a forked pen-holder, constructed substantially as set forth, consisting of as many prongs as there are tables, all the pens being moved and guided simultaneously in the same, and in any, direction, as described.

3. Arranging one inkstand above another, as described, in order that all the pens, in the different prongs, may be supplied with ink at the same time.

4. The method, as defined, of confining the sheets of paper, or the leaf of a blank-book, to the under table or tables.

NATHAN AMES.

Witnesses:
C. F. MACDONALD,
SAML. GRUBB.