N. AMES.

POLYGRAPH.

No. 12,048. Patented Dec. 12, 1854.

Fig. 2.

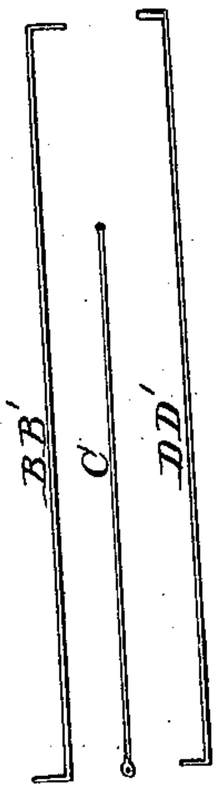


Fig. 3.

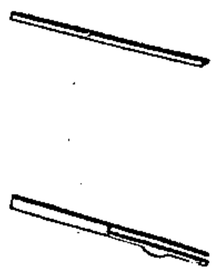
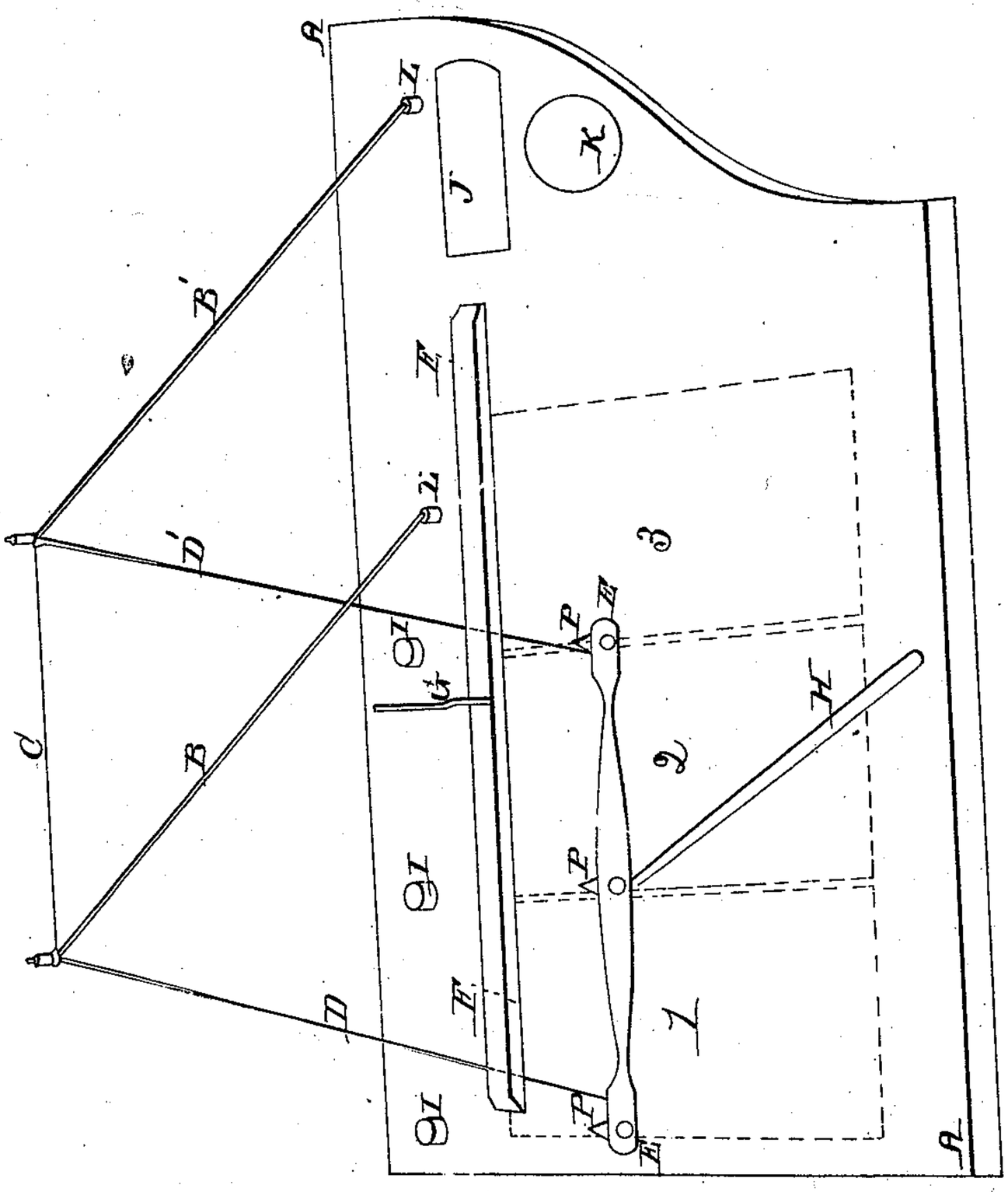


Fig. 1.



UNITED STATES PATENT OFFICE.

NATHAN AMES, OF SAUGUS, MASSACHUSETTS.

POLYGRAPH.

Specification of Letters Patent No. 12,048, 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 State of Massachusetts, have invented a new and useful instrument, which I call a "Reduplicator," 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.

A, A, is a board which, in an instrument of the proper size for writing simultaneously over two large, or three small, sheets, should be about thirteen inches wide, by twenty three long in its longest part, and sixteen in its shortest. The surface should be very flat and smooth; or that part, where the sheets of paper, 1, 2, 3, are placed, may be covered with leather or velvet. Instruments may, of course, be made either larger or smaller than this. It is also obvious that any common table or desk can be used instead of the board,—the wires, B, B′, being fastened into it.

F, F, is a strip of wood or steel, attached to the board by hinges on the lower corner nearest to the ink-stands, I, I, I, and held down on to the top of the sheets of paper, by the steel wire-spring, G.

B, B′, are iron or steel wires, (bent as represented by the same letters in Fig. 2), the lower ends of which fit into holes in the board, or into metallic beds L, L′, and turn in them with the least possible friction. C, is another wire (shaped like C in Fig. 2),—its two ends fitting on over the upper ends of B, B′. D, D′, are other similar wires (shaped like D, D′, in Fig. 2) one end fitting on over the ends of B, B′, the other into holes in the arm, E, E. All the joints of these wires should be close and smooth, so as to play with as little looseness, or friction, as possible.

E, E, is a light wooden arm into which the pens, P, P, P, are fastened in the same manner as common steel pens are fastened into their holders. This arm may be longer or shorter,—the distance between the pens being not less than the width of a sheet of paper. The wires, D, D′, are bent in such a manner as to keep this and the pens always raised a little from the surface of the paper, whenever they are not in use or depressed by the writer. The wires should be, however, only just stiff enough to raise the arm, and no stiffer, so that it shall require the slightest pressure to bring down the pens to their bearing on the paper.

P, P, P, the pens used may be of any kind in common use; but as it is exceedingly important, in writing with several pens at once, that all of them should always be supplied with ink, and to avoid the necessity of constantly watching them and dipping them into the ink-stands, I propose to make use of a pen which may be called a double, or triple, capillary fountain pen, constructed as follows,—Fig. 3 being side sectional views of the same:—Two, or three, pens are united at their upper halves in such a manner that their lower halves may stand apart about the fiftieth of an inch (more or less), in order that the capillary attraction of the space or spaces between them may sustain a much greater quantity of ink than can be held in any common pen. Pens constructed in this manner will receive ink enough from one dip into the ink-stands, to write over a page. Instead of two or three finished pens united as described, one pen with a thin strip of metal, on one or both sides of it, may be used.

H, is the handle by which the writer operates the instrument, holding it exactly as he does a common pen or pencil. The lower end of this handle being united to the center of the arm, E, E, by a universal joint, can be moved with perfect freedom at any angle with the surface of the paper.

I, I, I, are inkstands as far apart from each other, as the pens are, so that all the pens may be supplied with ink at the same time.

Methods of operating: Turn back the strip, F, F, on its hinges, and then place on the paper, one two or more sheets, as the case may be, in such a position that the top of the sheets shall touch the strip, F, F, and the left edge of the first sheet come nearly to the edge of the left side of the board, A, A, and the left side of the second sheet be as far from the left side of the first sheet as the second pen is from the first—and so on with all the sheets; and then turn back the strip, F, F, which by the spring, G, will hold them in place. Then take the handle, H, holding it and moving it in the same manner as you would a common pen.

The number of sheets, that may be written over at once, will depend upon their size, the size of the board and the number of pens in the arm E, E. In case only one sheet is used, only one pen need be dipped into the ink—two, only two pens and so on; or one or more of the pens may be taken out at pleasure.

Lastly,—for copying drawings and pictures, it is only necessary to place the originals in the place of the first sheet of paper and the blank paper or canvass in the place of the second sheet, and with a dry pen or pointer follow the lines of the original, and the copy, or copies, will of course, be like it. It is obvious that the same instrument enlarged may be used in the same manner for copying larger pictures or paintings. In this case, it will be convenient to place the handle, H, considerably nearer to the first pen on the left of the arm, E, E.

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

1. The horizontal parallel wires, B, B′, and D, D′, and the connecting wire, C, constructed and combined substantially as described, so that, by means of them alone, the pen-holder, E E, may be supported and guided, with as little complexity, weight, friction, and liability of getting out of repair, as possible,—the simple weight of the wires and pen-holder always preventing the joints from wearing loose however much the instrument is used, and the elasticity of the wires, D, D′, always supporting the pens at a small, but equal, distance from the surface of the paper, whenever they are not pressed down by the operator in writing, copying, or drawing.

2. The pen holder, E, E, attached to the wires, D D′, and constructed as described, so that at whatever angle the handle, H, may be held by the operator, the pens are always kept at the same, and the most favorable angle with the surface of the paper, their points bearing square upon it, and gliding easily and smoothly over it, without the slightest liability of cornering or catching into it.

NATHAN AMES.

Witnesses:
EDWIN DEXTER,
GEO. WM. PHILLIPS.