

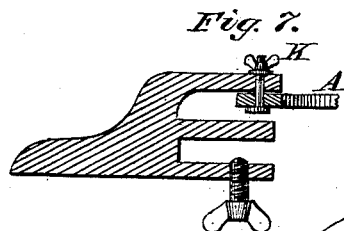
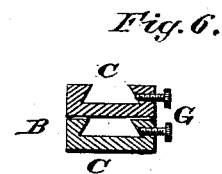
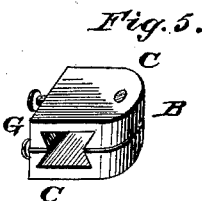
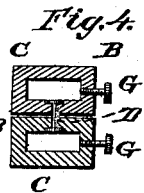
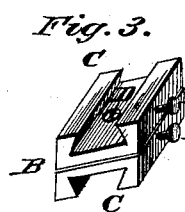
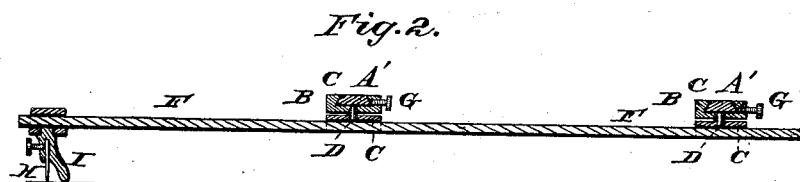
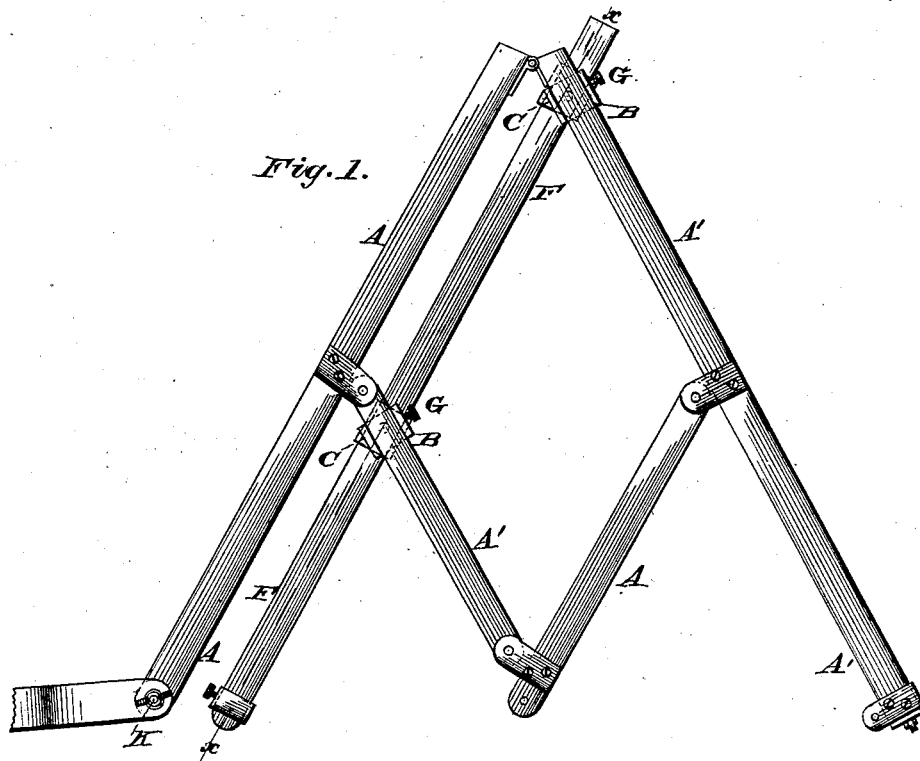
(No Model.)

J. G. BRAASTAD.

PANTOGRAPH.

No. 265,744.

Patented Oct. 10, 1882.



WITNESSES

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UNITED STATES PATENT OFFICE.

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PANTOGRAPH.

SPECIFICATION forming part of Letters Patent No. 265,744, dated October 10, 1882.

Application filed February 3, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN G. BRAASTAD, of St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Pantographs; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a plan view of my improved pantograph. Fig. 2 is a sectional view on the line *x x*, Fig. 1. Fig. 3 is a detail view of the swivel or coupling. Figs. 4, 5, and 6 are modifications of the same, and Fig. 7 is a view of the clamp or fastening.

Corresponding parts in the several figures are denoted by like letters of reference.

This invention relates to pantographs; and it consists in certain improvements in the construction of the same, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, *A A'* represent the set of bars, which are pivoted together in the usual manner so as to form the lazy-tongs, which constitute the body of the pantograph. Two adjoining parallel bars, *A'*, carry a pair of slides, *B*, each consisting of two clamps, *C*, swiveled together by means of a pin or bolt, *D*. The said clamps may both be dovetailed, as in Fig. 3, so as to fit upon the correspondingly-shaped bars, *A'*; or they may consist of rectangular boxes, inverted dovetail clamps, or upward-facing dovetail clamps, as shown respectively in Figs. 4, 5, and 6 of the drawings.

In the lower clamps of the slides *B* is secured a sliding arm, *F*, capable of being secured in

the clamps by means of set-screws *G*, and provided at its outer end with an adjustable needle or point, *H*, to trace or follow the lines of the drawing to be copied, and a bone or ivory guard, *I*, which serves to protect the said point and prevent it from sinking too deep into the paper of the drawing to be copied.

Suitable provision is to be made for the attachment to the pantograph of a pencil or pen, and to attach the device to the table or drawing-board I intend to avail myself of a swivel-clamp, (shown at *K* in Fig. 7 of the drawings.)

The operation of my improved pantograph is obvious, and requires no detailed explanation. It is simple in construction, convenient, and easily manipulated.

I deem the slides *B* and the clamp *K* important features in the invention.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The clamp *K*, having duplicate recesses, as shown, the lower one adapted to receive the edge of the table and the other the arm *A* of the pantograph, combined with said pantograph and with set-screws for adjustably securing the clamp to the table or the pantograph loosely to the clamp, as set forth.

2. The combination of the bars *A A'* and *A'*, pivoted together, as shown, the sliding bar *F*, slides *B*, and clamp *K*, to which the frame *A* is pivoted, all constructed to serve as and for the purposes specified.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

JOHN G. BRAASTAD.

Witnesses:

R. M. KIEFER,
JAS. O'BRIEN.