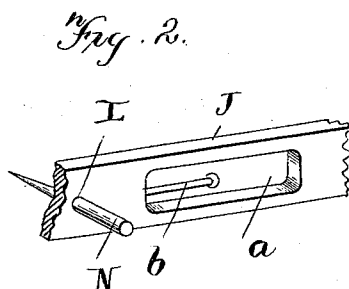
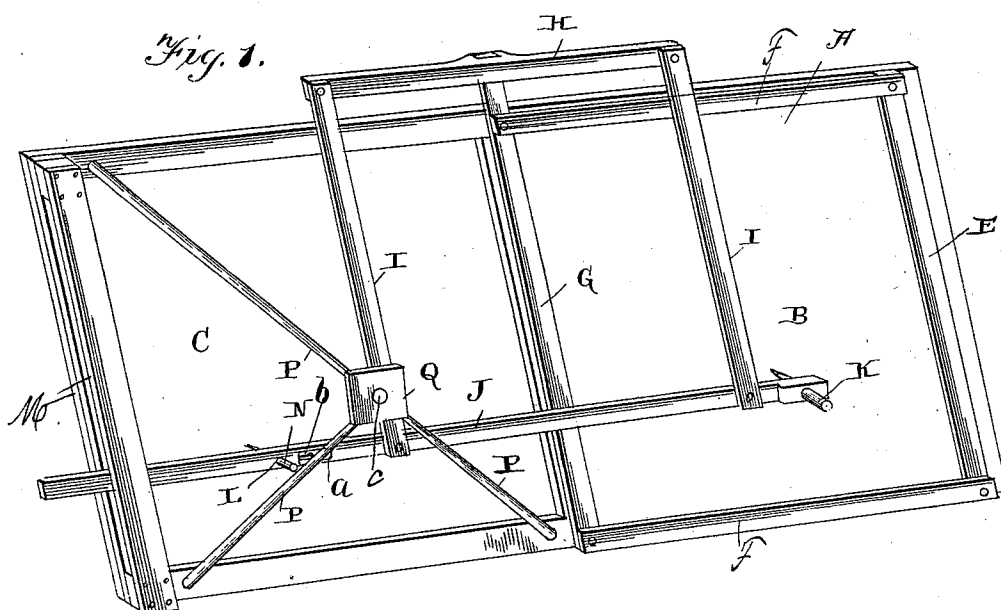


(No Model.)

H. V. JOSEPH.
PANTOGRAPH.

No. 529,917.

Patented Nov. 27, 1894.



WITNESSES -
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UNITED STATES PATENT OFFICE.

HERSCHEL V. JOSEPH, OF BLUE RIDGE, MISSOURI.

PANTOGRAPH.

SPECIFICATION forming part of Letters Patent No. 529,917, dated November 27, 1894.

Application filed April 24, 1894. Serial No. 508,844. (No model.)

To all whom it may concern:

Be it known that I, HERSCHEL V. JOSEPH, of Blue Ridge, in the county of Harrison and State of Missouri, have invented certain new and useful Improvements in Pantographs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in pantographs, and it consists in the particular arrangement of parts which will be fully described hereinafter and particularly pointed out in the claims.

The object of my invention is to provide a pantograph of the particular construction hereinafter shown and described, which is adapted to copy pictures, or to copy from an object directly, and which will reproduce the copy of exactly the same size as the original.

In the accompanying drawings:—Figure 1 is a perspective view of a pantograph embodying my invention, the same being shown in position to copy directly from an object. Fig. 2 is a detached enlarged view of that portion of the device which carries the sighting pin.

A indicates a board or table, which is supported on its edge as shown in Fig. 1 when the device is being used to copy directly any object, one end of this board being solid as shown at B to form a table for holding the blank paper upon which the copy is being made. The opposite end of said board is formed with an opening C, through which the object to be traced or copied is seen.

When the device is being used to copy from a picture the picture to be copied is placed and held in any desired manner over the opening C, and the whole device then preferably placed in a horizontal instead of a vertical position. Extending upward from the outer end of the solid portion B is a strip E, to opposite ends of which the two parallel bars F are loosely pivoted. Connecting the opposite ends of these two parallel bars is a bar G, loosely pivoted thereto, and rigidly connected to one end of bar G at right angles thereto is a bar H, thus forming a T of the

bars G and H as clearly shown. Loosely connected to opposite ends of this bar H are the bars I, the opposite ends of these bars I being loosely connected by the bar J. Both ends of the bar J extend beyond the bars I, that end over the solid portion B of the board being provided with an opening K to receive a pencil and its opposite end extending considerably beyond the bars I, and between two guiding bars M, by means of which the bars are held and guided parallel with the board as will be clearly understood. The bar J is provided with an opening L in which is inserted a tracing needle or pin N, which is carried over a picture, the operator holding on to the pencil inserted through the opening K, in the usual manner of operating this class of devices. Outside of the bars I and between the inner one and the end of the bar J, the bar J is provided with an opening a, into which projects a pointer or pin b, both of which are used when the device is operated for outlining an object, as will now appear.

Extending from three of the corners of the walls of the opening C, are the uprights P, which converge at their upper ends and are connected at their extremities by means of a plate Q, having an opening c. In this manner the plate Q is supported directly over the center of the opening C.

When the device is being used to outline or copy an object, the board is supported in the desired position so that the whole of the object being outlined can be seen through the opening C, by sighting through the central perforation c, in the said plate Q, and through the opening a, upon the bar J. The operator then sights the object through the opening c of the plate Q, and through the opening a, the pointer b, being guided around the outline of the object being copied by sighting through the said perforations, and the pencil over the table B will reproduce an exact copy of the object upon the blank paper over the table portion B of the board. The operation of the device in this particular is well understood by those versed in this art, and it need not be more fully described here.

Attention is directed to the special construction of the pivotal bars, which consists of two parallel bars F, the bars G and H, and

the bar J which is held at right angles to the bar G at all times by means of the bars I. Owing to this construction the pencil travels the exact distance that the pointers L or b, do so that the copy is the exact size of the picture being copied, and the outline of the object the same size that the object appears through the opening c, which is governed by the distance that the device is supported from the object being outlined, as will be readily understood.

I do not claim broadly the idea of a sighting device in connection with a pantograph, nor broadly a pantograph, but the particular construction of my device which has proven very convenient and accurate to operate.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A pantograph consisting of two parallel bars pivotally connected to a suitable support, one portion of a T shaped bar connecting the opposite ends of said parallel bars, the bars I having one of their ends connected loosely to the opposite ends of the other portion of the said T, and the bar J connecting the opposite ends of the said bars I, the bar J adapted to carry a point and a pencil substantially as described.

2. A pantograph, comprising two parallel bars connected to a suitable support, a T having one portion connected to the opposite ends of the said parallel bars, the bars I con-

nected to the other portion of the said T, the bar J connecting the opposite ends of the bars I and adapted to carry a pointer and a marker, a guide extending in a plane in a line with the plane traveled by the bar J, and one end of the said bar extended outside of the parallel bars I and resting in said guide for the purpose described.

3. A pantograph comprising a board having a solid and an open end, a marker carrier extending over said solid and open ends, supporting arms extending away from said board and converging inward over the center of said opening, and a perforated plate supported by said arms or supports over the center of said opening, substantially as specified.

4. A pantograph comprising a board having a solid and an opening end, the marker carrier of said pantograph extending over the said solid and open portions of the board, a perforated plate supported away from the board but over the center of the said open portion, the said marker carrier provided with an opening over the said open portion of the board, and a pointer in said opening, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

HERSCHEL V. JOSEPH.

Witnesses:

W. C. COLE,
E. H. FRISBY.