



# United States Patent Office.

## IMPROVEMENT IN ELLIPSOGRAPHS.

HONESTUS M. ALBEE, OF WEBSTER, MASSACHUSETTS.

*Letters Patent No. 60,609, dated December 18, 1866.*

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, HONESTUS M. ALBEE, of Webster, in the county of Worcester, and State of Massachusetts, have invented a new and improved Ellipsograph; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a side elevation of this invention.

Figure 2 is a diagram showing the manner in which my ellipsograph is used.

Similar letters of reference indicate like parts.

This invention consists in the arrangement of an arm provided with an adjustable point in combination with one leg of an ordinary compass, the other leg of which is constructed to receive a pencil or pen in such a manner that when the adjustable point is removed from the leg of the compass to a distance equal to the difference of the major and minor axis of the ellipse to be described, and said point and leg are moved along on the two catheti of a right-angled triangle, or in the grooves of a trammel, the pen or pencil connected to the compass will describe a portion of an ellipse, and by shifting the right-angled triangle and repeating the operation, a complete ellipse of any desired proportion can be described.

A represents a compass of any desired construction, and arranged so that its two legs, B C, can be adjusted at any desired distance apart by a segmental guide, *a*, and set-screw, *b*, or by any other suitable means. On the leg B of this compass, is secured an arm, D, which may be rigidly attached to the same, or which may be held in place by a set-screw, so that it can be readily removed if it is not to be used, and that it does not interfere with the ordinary use of the compass. Said arm forms the guide for a point, *c*, which is adjustable thereon by means of a set-screw, *d*, so that it can be secured at any desired distance from the point of the leg B. The leg C is provided with a socket, *e*, to receive a pen or pencil, and said socket may be constructed in any desirable manner.

When the instrument is to be used for the purpose of describing an ellipse, I first draw two lines at right angles to each other from the centre of the ellipse to be described, in the direction of the major and minor axis of said ellipse, and then I adjust the point *c* so that its distance from the point B is equal to the difference between the major and minor axis, and open the leg C so that the distance of the point of the pen or pencil from the point *c* is equal to one-half the major, and from the point B equal to one-half the minor axis. In this position I secure the several parts of the compass, and then I adjust in one of the right angles enclosed by the major and minor axis, an ordinary wooden square, as shown in fig. 2, and by moving the points *c* B along on the catheti of said square, the pen or pencil describes one-quarter of the desired ellipse. By changing the position of the square to the adjoining angle and repeating the operation, the next quarter of the ellipse is described, and so on until the ellipse is completed.

The principal advantage of this instrument is its great simplicity, nothing being required, in addition to an ordinary compass or case of drawing instruments, but the arm D, with its adjustable point *c*; and by securing said arm on one of the legs of the compass, an ellipsograph is obtained with which ellipses of any desired form or proportion can be drawn with the greatest ease and facility.

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

The arm D, with its adjustable point *c*, in combination with the compass A, constructed and operating substantially as and for the purpose described.

The above specification of my invention signed by me this twelfth day of June, 1866.

HONESTUS M. ALBEE.

Witnesses:

WM. F. McNAMARA,

W. HAUFF.