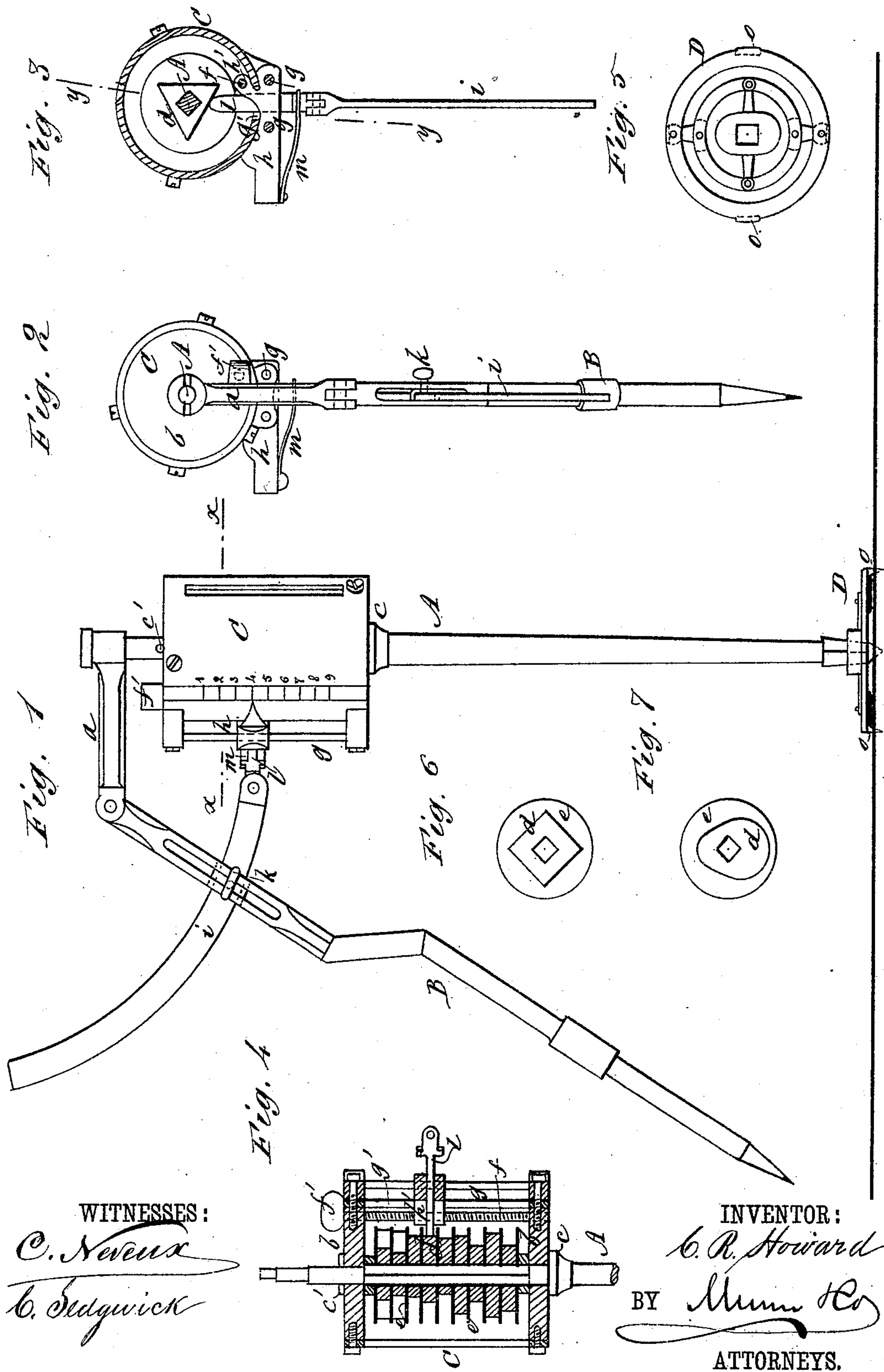


(No Model.)

C. R. HOWARD.  
DRAFTING INSTRUMENT.

No. 249,049.

Patented Nov. 1, 1881.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

CYRUS R. HOWARD, OF HUNTINGDON, PENNSYLVANIA.

## DRAFTING-INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 249,049, dated November 1, 1881.

Application filed August 5, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, CYRUS R. HOWARD, of Huntingdon, in the county of Huntingdon and State of Pennsylvania, have invented an Improved Drafting-Instrument, of which the following is a specification.

The object of my invention is to furnish an instrument for marking out geometrical figures; and it consists in the combination of a marking-arm, a post carrying numerous figure-plates, and an adjustable finger carried by the marking-arm for engagement with either figure-plate, as hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of the instrument in the position of use. Fig. 2 is a top view of the same. Fig. 3 is a cross-section on line *xx* of Fig. 1. Fig. 4 is a longitudinal section on line *yy* of Fig. 3. Fig. 5 is a plan view of the foot-piece, and Figs. 6 and 7 are face views of figure-plates.

Similar letters of reference indicate corresponding parts.

A is the post of the instrument, and B is the pencil or scribing arm, hinged to a short horizontal arm, *a*, that is fitted to turn on the upper end of post A.

C is a hollow cylinder, having removable heads *b b*, through which the upper end of post A passes, so that the cylinder is supported on the post between a collar, *c*, and cross-pin *c'*, and may turn freely. Within the cylinder and on the post are the figure-plates *d*, which may be as numerous as desired, and are separated by washers *e*, that are of larger diameter than the plates, so as to form grooves around the several plates. The shaft is squared and the plates are apertured to correspond, so that they may not turn. The plates *d* vary in shape, as shown in Figs. 3, 6, and 7, and may be of any desired shape—such as circular, square, oval, rhomboidal, octagonal, hexagonal, &c.

Lengthwise of cylinder C is a screw, *f*, which is held in place by the heads *b b*, and has a head, *f'*, on its upper end for convenience in turning the screw. At one side of the cylinder, and outside the same, there are two fixed rods, *g g*, on which is a slide-block, *h*, that has a flange portion, *h'*, extending through a slot, *g'*, in the

cylinder to the screw *f*. The flange is threaded to receive the screw, so that by turning the latter the block *h* is moved on the rods *g*.

The pencil-arm B has a slot in which is a curved arm, *i*, held to the arm by a set-screw, *k*. To the inner end of arm *i* is pivoted a finger, *l*, that extends through the slide-block *h* and the slot *g'* of the cylinder to the figure-plates *d*. A spring, *m*, attached to block *h* and engaging the finger *l*, tends to retain the finger in contact with the figure-plate at which it is set. This construction allows, first, adjustment of arm B on the curved arm *i*, whereby the size of the figure inscribed is regulated, and, second, adjustment of block *h*, so that the finger *l* shall engage either of the figure-plates *d*. To adjust block *h*, the arms A B must be stretched apart far enough to release the finger *l* from the washers *e* and the screw *f*, then turned until the block is in the proper position, when the arms are to be released, and the spring *m* will carry the finger into place.

The lower end of post A is formed angular, and a foot-piece, D, formed to receive the end of the post, is provided for sustaining it. On the foot-piece are sharp prongs *o*, which, being caused to enter the surface on which the piece is laid, prevent the piece D and post from turning.

In use the post A is placed in the foot-piece D and the cylinder C turned by hand, while the pencil rests on the surface to be marked. The arm B is thus carried around the post, and at the same time is caused to move in and out by the finger *l*, according to the form of the figure-plate, so that the form of the figure-plate is produced on an enlarged scale.

As shown in Fig. 1, the cylinder C is marked adjacent to the slot *g'*, with lines that correspond in position with the figure-plates *d*, and the lines are numbered or otherwise marked to indicate the figures. The block *h* has a pointer which serves, in connection with the lines, to aid the adjustment of block *h*.

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

1. The combination, in a drafting-instrument, of a post carrying figure-plates, a pencil-arm hung to revolve on the post, and a finger hung



on the pencil-arm and engaging either figure-plate on the post, substantially as shown and described.

2. The combination, in a drafting-instrument,  
5 of post A, provided with figure-plates *d*, marking-arm B, slotted cylinder C, slide *h*, arm *i*, and finger *l*, substantially as shown and described.

3. In drafting-instruments, the screw *f*, slide

*h*, provided with nut *h'*, finger *l*, spring *m*, arm *to* *i*, fixed post A, carrying plates *d*, and the marking-arm B, substantially as shown and described, combined for operation as set forth.

CYRUS R. HOWARD.

Witnesses:

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