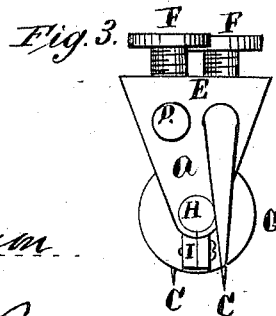
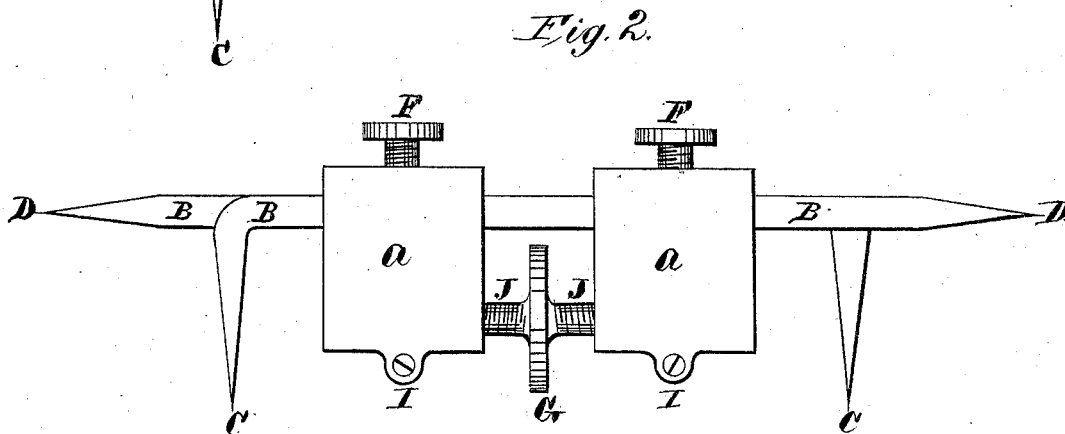
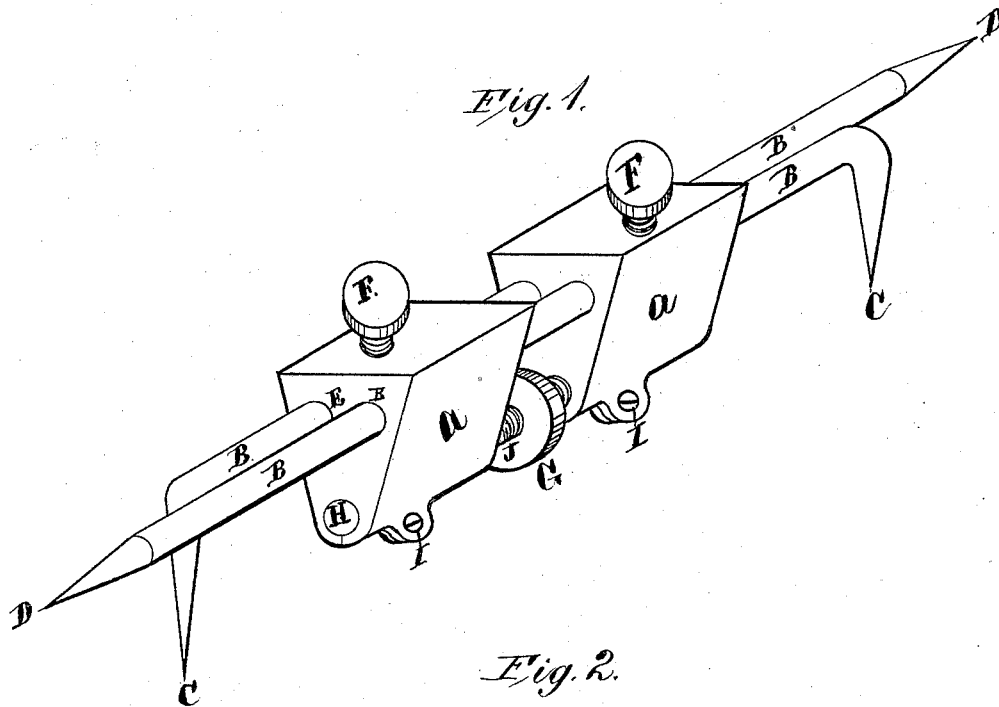


(Model.)

E. PATCH.
BEAM COMPASSES.

No. 306,278.

Patented Oct. 7, 1884.



Witnesses;
V. P. Richardson
Charles Viney

Inventor;
Emory Patch

UNITED STATES PATENT OFFICE.

EMORY PATCH, OF JANESVILLE, WISCONSIN.

BEAM-COMPASSES.

SPECIFICATION forming part of Letters Patent No. 306,278, dated October 7, 1884.

Application filed January 19, 1884. (Model.)

To all whom it may concern:

Be it known that I, EMORY PATCH, a citizen of Janesville, in the county of Rock and State of Wisconsin, have invented a new and useful Trammel and Calipers, of which the following is a specification.

My invention relates to improvements in combined trammel and calipers in which two blocks of metal are drilled to receive two rods. One end of each rod is bent to form the trammel-points. The opposite end of the rod is pointed to form the caliper-points. The rods are so connected that either rod may be easily moved, and then rigidly clamped at any point in their length; but when so clamped they may be readily adjusted with a slow-motion screw.

The objects of my invention are, first, to provide a trammel which, when set, the points may be moved for close adjustment; second, to provide a caliper which, when set near the required size, may be moved for close adjustment; third, to provide a combination of a trammel and calipers, so that a trammel-point and a caliper-point may be used together, or vice versa, and when set near their proper position they may be closely adjusted with a slow-motion screw. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a view in perspective. Fig. 2 is a side view. Fig. 3 is an end view.

Similar letters refer to similar parts throughout the several views.

A A represent two blocks, which are drilled at E to receive two rods, B B, freely. One end of each rod is bent and pointed to form the trammel-point C C. The opposite end is pointed to form the inside caliper-points, D D.

F F are thumb-screws for fastening the rods B B to the blocks A A. One rod is fastened to one block by one set-screw, and the other rod is fastened to the other block by the other set-screw, thus leaving the two rods free to move lengthwise. The blocks A A are tapped at H, one block with a right-hand thread and the other block with a left-hand thread, to re-

ceive the double screw J J, which, when turned by the milled head G, will cause the blocks A A to move toward or from each other. Now, since one rod B is held rigidly to one block A by a set-screw, F, and the other rod is held fast to the other block by the other set-screw, the points C C and D D can be moved for close adjustment by the slow-motion screw J J. I is a tightening-screw to take up wear in the double screw J J.

To use my device, I first loosen the set-screws F F, move the rods B B by hand, so that the points C C or D D will be as near their proper distance as will be convenient, then tighten the thumb-screws F F, when, by turning the milled head G, we can very readily set the points at their exact position.

I do not limit myself to the section of the rods B B, which may be round, square, or any other section. Neither do I limit myself to the form of the point C C or D D, as the point C C might be made to curve in toward the blocks A A, and thus form an outside caliper; but my invention includes any form of points for measuring distance between points, lines, or surfaces by the manner herein shown and described. Neither do I limit myself to the double screw J J, as the same motion may be obtained by threading only one end of the screw and using the opposite end as a journal.

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

1. The combination of the apertured blocks A A, the rods B B, each having a bent trammel-point at one end, and the thumb-screws F, substantially as shown and described.

2. The combination, with the apertured blocks A A, rods B B, having trammel-points C C and caliper-points D D, of the right and left adjusting-screw J, substantially as shown and described.

EMORY PATCH.

Witnesses:

V. P. RICHARDSON,
CHARLES VINEY.