

(No Model.)

W. W. PENNINGTON.
PROTRACTOR.

No. 570,767.

Patented Nov. 3, 1896.

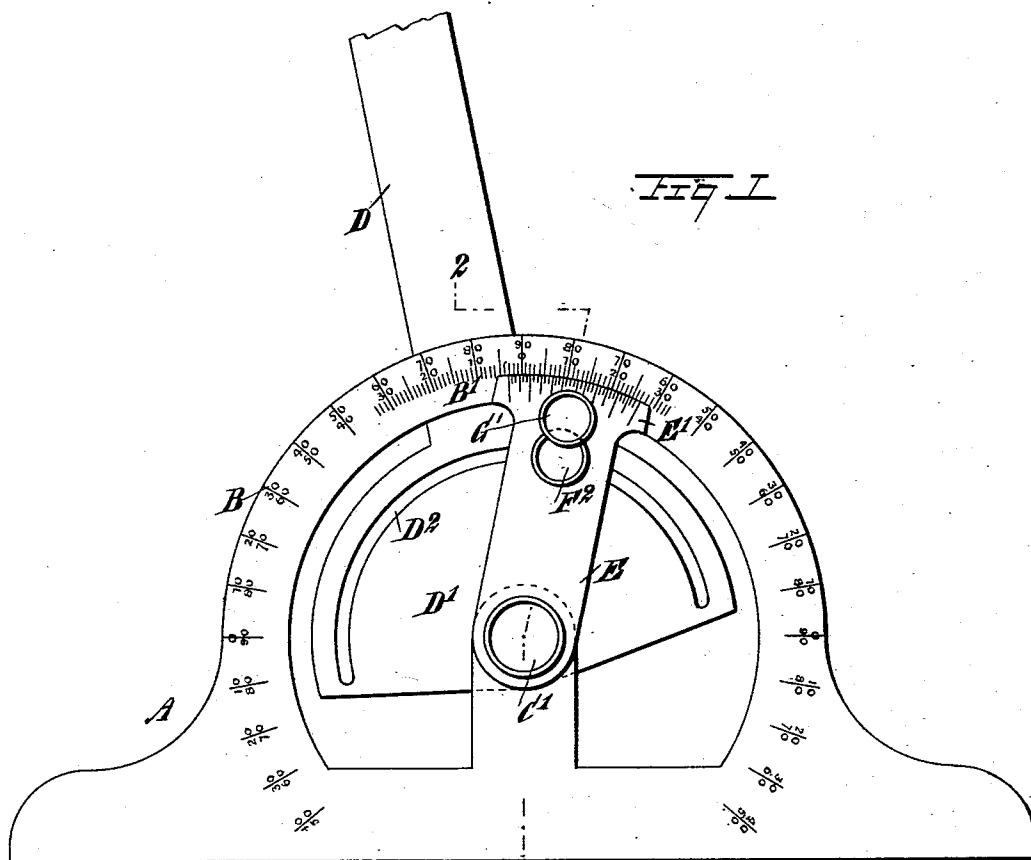
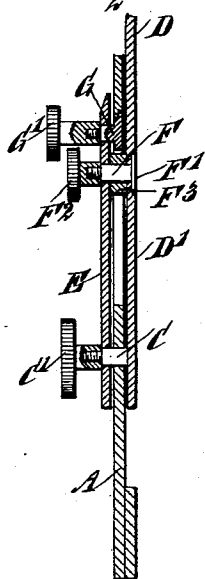


Fig 2



WITNESSES:

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WALTER W. PENNINGTON, OF BUTTE, MONTANA.

PROTRACTOR.

SPECIFICATION forming part of Letters Patent No. 570,767, dated November 3, 1896.

Application filed December 12, 1895. Serial No. 571,891. (No model.)

To all whom it may concern:

Be it known that I, WALTER W. PENNINGTON, of Butte, in the county of Silver Bow and State of Montana, have invented a new and Improved Protractor, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved protractor designed for use on maps, drawings, and the like and arranged for the usual adjustment in proper position on the drawing or map relative to the meridian thereon.

The invention consists principally of a blade pivoted in the center of the body of the protractor and a pivoted vernier-arm adjustably held on said blade.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the views.

Figure 1 is a face view of the improvement, and Fig. 2 is a transverse section of the same on the line 2 2 of Fig. 1.

The improved protractor is provided with the usual body A, formed on its face with the usual graduation B and provided at its center with the pivot C, projecting from a blade D, having the enlarged pivot end D' formed with a segmental slot D².

On the pivot C is fulcrumed a vernier-arm E, provided at its free end with a graduation E', adapted to indicate on a subgraduation B' of the graduation B. A nut C', screwing on the outer threaded end of the pivot C, serves to clamp the vernier-arm E, the blade D, and the body A together whenever desired.

The vernier-arm E carries near its free end a stud F, the shank of which extends through the segmental slot D² to engage with its head F' the back of the enlarged end D' of the blade D. A nut F² screws on the outer threaded end of the stud F to securely clamp the vernier-arm E in place on the blade D. A second stud G engages the free end of the vernier-arm E and the body A, and on this stud G screws a nut G' for clamping the vernier-arm and body together.

On the stud F is held a washer F³, made a little thicker than the body of the protractor to prevent binding of the vernier-arm E to the body A whenever the vernier and blade D are clamped together.

Now it will be seen that by the arrangement described the vernier-arm E can be set in any desired position relative to the blade D and the body A, so that the protractor can be readily adjusted to the meridian of the map or drawing irrespective of the position in which the map or drawing is placed.

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

A protractor, comprising a body having a pivot at its center, a blade carrying said pivot and provided with an enlarged end having a segmental slot, a vernier-arm fulcrumed on the said pivot, means for clamping the said vernier-arm to the said blade, and means for fastening the vernier-arm to the said body, substantially as shown and described.

WALTER W. PENNINGTON.

Witnesses:

ELLIOTT H. WILSON,
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