(No Model.)

T. J. PARKINSON.

PROTRACTOR.

No. 453,385. Patented June 2, 1891.

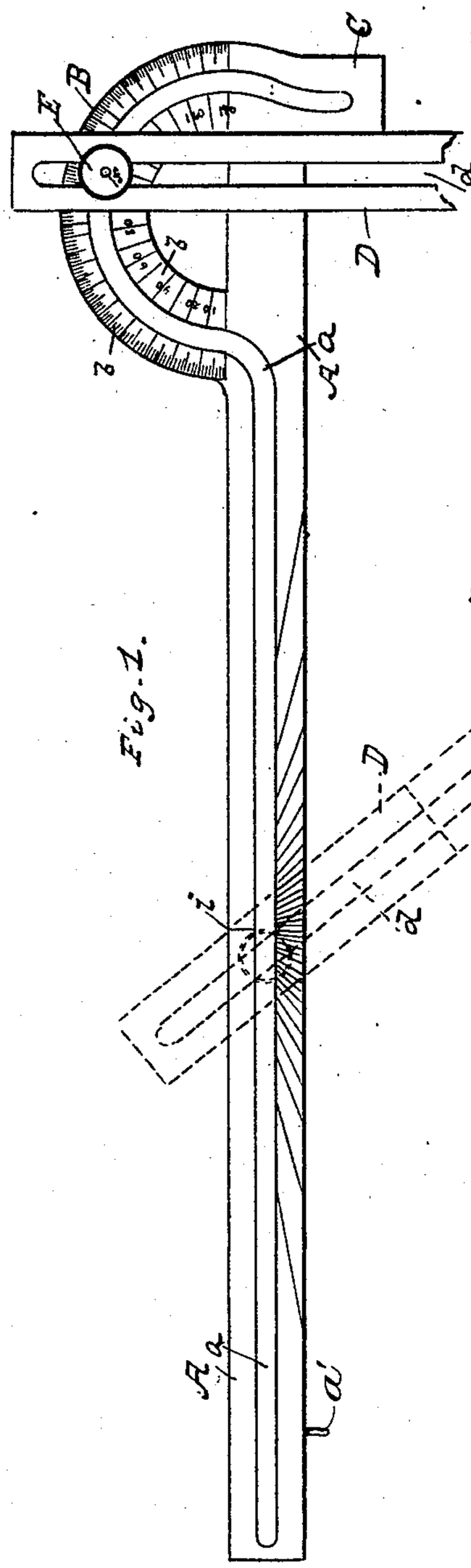

Fig. 1.

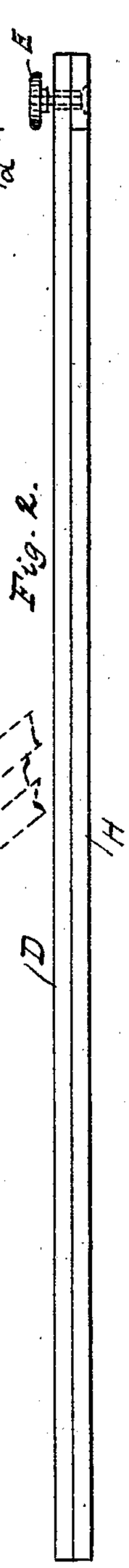

Fig. 2.

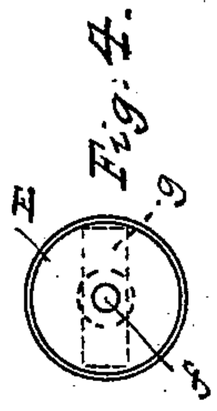

Fig. 4.

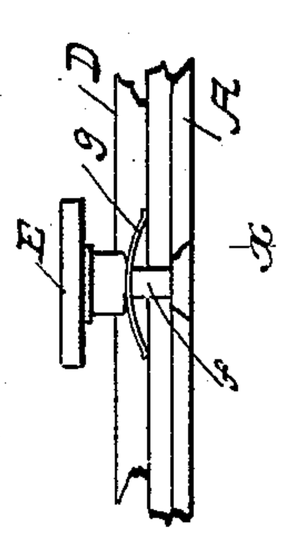

Fig. 5.

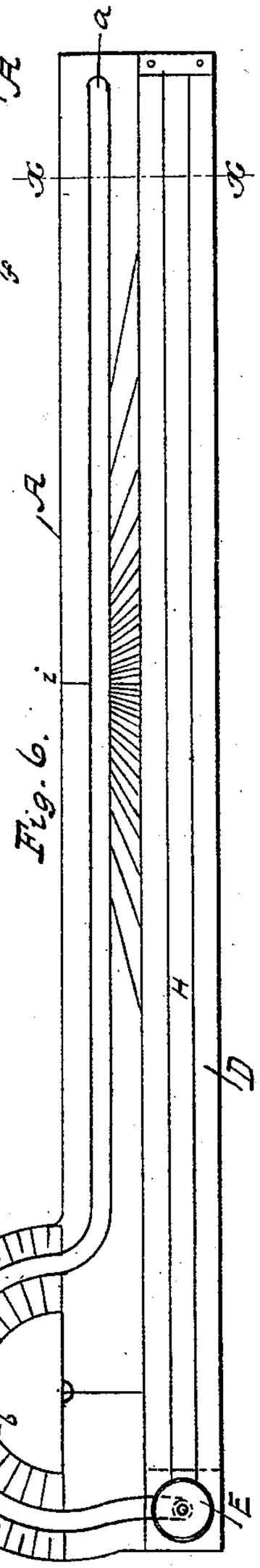

Fig. 6.

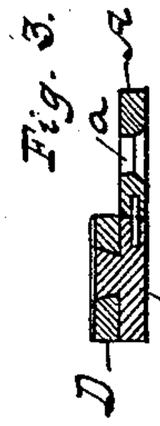

Fig. 3.

Witnesses:

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Chauncey B. Bostwick

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Thomas J. Parkinson

per

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UNITED STATES PATENT OFFICE.

THOMAS J. PARKINSON, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JOHN R. BAUM, OF SAME PLACE.

PROTRACTOR.

SPECIFICATION forming part of Letters Patent No. 453,385, dated June 2, 1891.

Application filed January 14, 1891. Serial No. 377,764. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. PARKINSON, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Protractors and Angle-Measuring Devices; 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 the same, reference being had to the accompanying drawings, which form a part of this specification, in which—

Figure 1 indicates a plan view showing the measuring-arm adjusted to take angles in two different positions. Fig. 2 is a side elevation of the same. Fig. 3 is a cross-section on line *x x* of Fig. 6. Figs. 4 and 5 are respectively enlarged plan and side elevation of the thumb nut and its clamping-spring. Fig. 6 is a plan showing instrument closed.

My invention relates to devices known as "protractors" and "angle-measurers;" and it consists in the novel construction and arrangement of parts hereinafter specifically described, my object being to simplify the construction and increase the efficiency of the same. This I believe I have accomplished by the device hereinafter described, reference being had to the accompanying drawings, forming part hereof, in which like letters indicate like parts wherever they occur.

Referring now to said drawings, A indicates one arm of said instrument, one end of which terminates in the protractor B, integral with said arm or suitably secured thereto and having marked thereon a graduated scale *b* of angles. Said arm is formed with a slot *a*, which extends longitudinally of the same to the inner end of said protractor, conforming in shape therewith and terminating in the lip or projecting part *c*, which is also integral with said arm A; also with a pin *a'*, which projects from the inner side the same near the end thereof and adapted to fit into a hole in the inner side of the other arm when said instrument is closed, as shown in Fig. 6. D is the other arm, which is provided with a slot *d*, extending longitudinally the length thereof. Said arms A and D are connected and adapted to be rigidly secured together by the thumb-nut E upon the screw *f*, which projects through the slots in said arms. Said arm D is extensible, the top of the lower extensible part H being provided with a V-shaped rib in the center thereof longitudinally of the same, which is dovetailed in the slot *d* of the upper portion and adapted to be moved backward and forward therein, whereby said arm may be lengthened and shortened and at the same time permitting said arm to be upon the same plane as the other arm and in close contact with the paper.

g is a spring loosely secured upon the screw *h* and neatly fitted in the slot *d* of the arm D, the ends thereof being in line therewith and spanning and resting upon the edges of the slot *a* in arm A and adapted when compressed by the nut E to firmly bind said arms when adjusted. Upon the surface of the arm, at the outer edge and about intermediate the outer end thereof and the inner end of the protractor, is marked a zero-point *i* and a graduated scale of angles radiating therefrom, as shown in Fig. 6, whereby angles may be obtained, as well as by the protractor.

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

1. A protractor and angle-measuring device, substantially as described, one end of one of its arms having a semi-circle integral therewith or suitably secured thereon, having marked thereon a graduated scale of angles, the same end of said arm having also a lip projecting from the inner side thereof, said arm being provided with a slot extending longitudinally of the same and around said semi-circle and terminating in the lower end of said lip, the other arm of said tool being provided with a slot longitudinally of the same and having a lower part dovetailed and adapted to be moved backward and forward therein, both said arms being secured together when adjusted by the thumb-nut upon the screw which projects and is movable freely in the slots in said arms, whereby the angle which said arms relatively occupy to each other may be readily found by moving the arm D to the required angle marked on the protractor, substantially as herein set forth.

2. A protractor and angle-measuring device, substantially as described, one end of one of its arms having a semi-circle integral therewith having marked thereon a graduated scale of angles, said arm having marked on its outer edge about midway its length a zero-point having a scale of angles radiating therefrom, the said end of said arm terminating in the protractor having also a lip projecting from its inner side, said arm being provided with a slot extending longitudinally the same and around said semi-circle and terminating in the lower end of said lip, the other arm of said device being provided with a slot longitudinally the same and having a lower part dovetailed and adapted to be moved backward and forward therein, both said arms being secured together when adjusted by the thumb-nut upon the screw which projects and is movable freely in the slots in said arms, whereby angles may be obtained by adjusting said arm D at the required angles marked upon protractor or from the zero-point on arm A, substantially as and for the purpose described.

In testimony that I claim the foregoing I hereunto affix my signature this 10th day of January, A. D. 1891.

THOMAS J. PARKINSON. [L. S.]

In presence of—

JAMES BRYAR,

ROBERT H. KING, Jr.