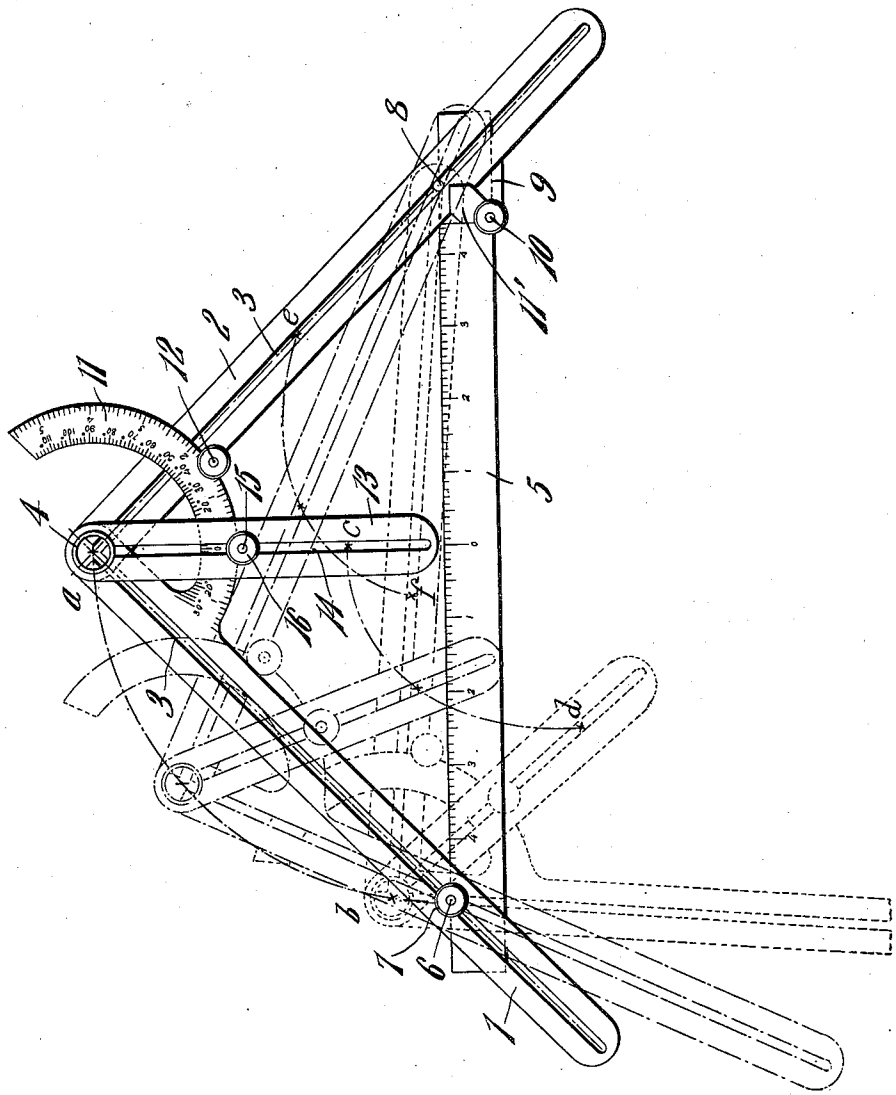
No. 861,400. PATENTED JULY 30, 1907.

L. M. SHERIDAN.

DRAFTING INSTRUMENT.

APPLICATION FILED SEPT. 24, 1906.



WITNESSES:

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LESLIE M. SHERIDAN, OF ANACONDA, MONTANA.

DRAFTING INSTRUMENT.

No. 861,400. Specification of Letters Patent. Patented July 30, 1907.

Application filed September 24, 1906. Serial No. 335,930.

To all whom it may concern:

Be it known that I, LESLIE M. SHERIDAN, a citizen of the United States, residing at Anaconda, in the county of Deerlodge and State of Montana, have invented a new and useful Drafting Instrument, of which the following is a specification.

This invention relates to an instrument designed to be used by draftsmen, engineers, and the like, to take the place of templets, known to the trade as railroad-curves, for drawing geometrical curves approximating spirals, ellipses and arcs of circles of any radii from zero to infinity, and where the centers are unknown.

The principle on which the instrument operates is based upon the fact that when the legs of a fixed or constant angle are guided by two stationary points, the vertex of the angle will describe an arc of a circle, while a point lying in a line bisecting the angle will describe a portion of an ellipse, and a point along either of the legs will describe a portion of a spiral.

The invention has for one of its objects to provide a curve drawing instrument of the character described which is of simple and improved construction and by which a large variety of curves can be conveniently drawn.

A further object of the invention is the provision of an instrument of the nature referred to, which is so constructed that it is readily adapted for use as a protractor, a triangle whose angles are adjustable, and as a device for drawing straig' t, as well as curved, lines.

With these objects in view, and others, as will appear as the nature of the invention is better understood, the invention comprises the various novel features of construction and arrangement of parts, which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one embodiment of the invention, the full lines show the instrument in plan while the dotted lines show the movable parts of the instrument in two positions to indicate the describing of a curve.

Referring to the drawing, 1 and 2 designate the legs of the instrument which are preferably made of strip metal, such as brass, German silver, aluminium, or the like, and carefully finished to form straight edges so that the legs may be used as a triangle for drawing straight lines. Each leg is provided with a longitudinal slot 3 extending substantially the entire length thereof and the adjacent ends of the legs are hinged together by an annular rivet 4. At the open side of the angle formed by the two legs is a beam or member 5 that carries the guiding points for guiding the movement of the legs 1 and 2. The member 5 is also a strip of suitable material having straight edges and one or both of the guiding pins or points may be adjustably mounted thereon. In the present instance, the left hand guiding pin is in the nature of a screw 6 engaging in a threaded aperture of the lug 7 formed on the member 5. The shank of the screw extends through the slot 3 of the leg 1 and permits the leg to move freely along the same. This screw also serves to clamp the leg 1 and member 5 tightly together when such is desirable. The other guiding pin 8, which movably engages in the slot 3 of the leg 2, is mounted on a slide 9, the slide being guided along the member 5 and secured in fixed position thereon by the binding screw 10. The leg 2 is confined between the body of the slide 9 and an overhanging arm 11′ formed on the slide, thereby insuring the permanent engagement of the pin 8 with the slot of the leg 2.

On one of the legs, as, for instance, the leg 1, is a segmental arm 11 preferably formed integral therewith and extending over the leg 2. This arm is provided with scales in the denomination of degrees and inches, so that the instrument may be used as a protractor, when desired. The leg 2 is provided with a clamping screw 12 that clamps the arm 11 and leg 2 together so that the said arm forms a convenient means for firmly holding the legs 1 and 2 in fixed angular adjustment.

Arranged over the segmental arm 11 is a central arm 13 which is provided with a longitudinal slot 14 and is pivoted at one end to the legs 1 and 2 by the rivet 4. This arm is preferably made of strip material similar to the legs of the instrument and is arranged to be clamped in fixed position with respect to the segmental arm 11 by a clamping screw 15 and nut 16.

With an instrument constructed as above described, an arc of a circle can be drawn by placing a pencil at the vertex of the angle formed on the legs 1 and 2, preferably in the annular rivet 4. The member 5 is held stationary on the drawing board by one hand while with the other hand, which holds the pencil at the vertex of the angle, the legs are moved around on the guiding pins 6 and 8, so that a curve, such as *a* and *b* is produced. The dotted line positions show the legs being moved to the left from the central or full line position, and it will be obvious that, by moving the legs to the right, an arc corresponding to *a* and *b* will be described, making thereby an approximate semi-circle. By placing the scriber or pencil at any point along the slot 14 of the central arm 13, a curve, such as *c*, *d*, will be generated, while a curve, such as *e*, *f*, will be produced by placing the pencil along either of the legs. The pencil is held in one hand of the operator with the point portion thereof extending through the slot of any member 1, 2 or 13 and bearing against the wall of the slot to steady the pencil. In this manner, the pencil can be held in proper position as the device is moved to trace a curve. Curves of different forms may obviously be produced according to the position of the pencil in the slots of the legs and central arm. When it is desired to draw concentric circular arcs, the distance between the guiding pins 6 and 8 is successively changed for each successive curve, the changing

of these guiding points results in a corresponding change in the effective radius of movement.

I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, but I desire to have it understood that the apparatus shown is merely illustrative, and that various changes may be made, when desired, as are within the scope of the invention.

What is claimed is:—

1. In a device of the class described, the combination of two longitudinally slotted legs, a pivot connecting the corresponding ends of the legs, means adjustably connecting the legs to hold them in fixed angular relation, a member adapted to be held stationary and arranged with its extremities overlapping the legs, a fixed guiding pin on the said member loosely extending into the slot of one of the legs, a slide on the member, means for holding the slide stationary, and a pin on the slide movably engaging in the slot of the other leg.

2. In a device of the class described, the combination of two longitudinally slotted legs, a pivot connecting the corresponding ends of the legs, a segmental arm on one of the legs, a clamping device on the other leg engaging the said arm for holding the legs in fixed angular relation, a member adapted to be held stationary and extending from one leg to the other, and guiding pins on the said member engaging in the slots of the legs.

3. In a device of the class described, the combination of two longitudinally slotted legs, a slotted arm, a rivet pivotally connecting the legs and arms together, a segmental arm on one of the legs, a fastening device on the other leg coöperating with the segmental arm for adjustably holding the legs in angular relation, a fastening device on the slotted arm coöperating with the segmental arm to hold the first arm in fixed position, a member adapted to be held stationary and extending from one leg to the other, and guiding pins mounted on the said member to be adjustable and engaging in the slots of the legs for guiding the movement of the latter.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

LESLIE M. SHERIDAN.

Witnesses:
R. R. IVES,
WM. E. MCCLELLAND.