

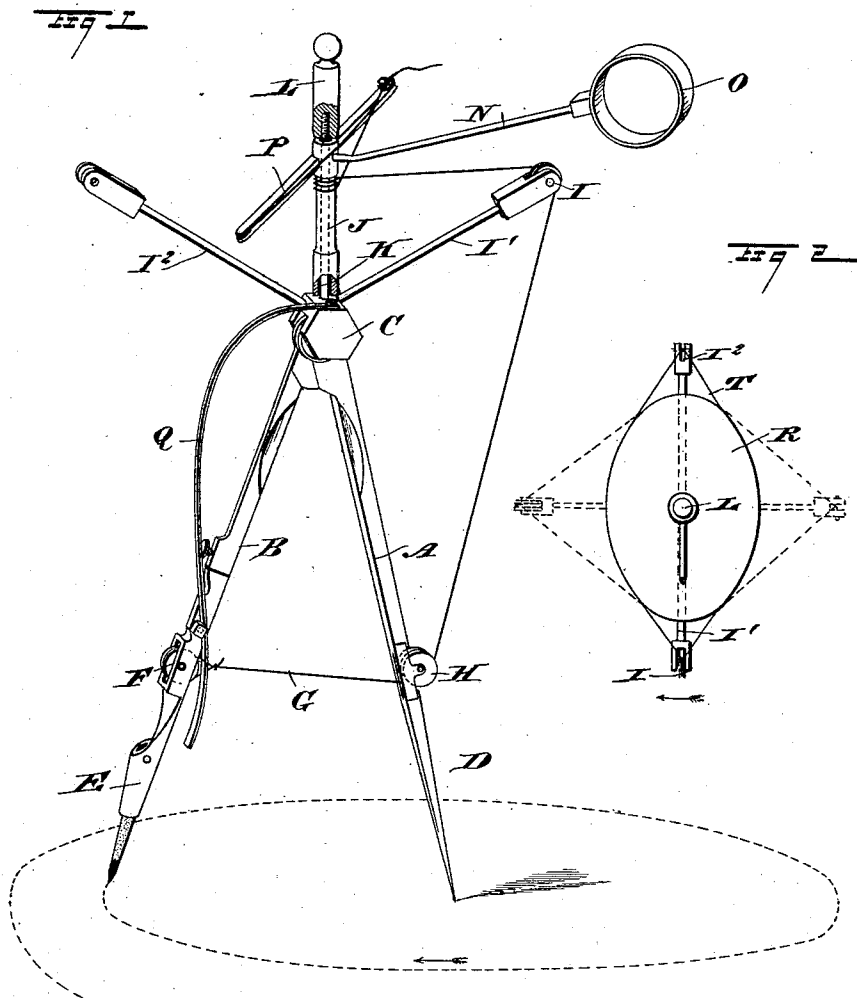
(No Model.)

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INSTRUMENT FOR DRAWING GEOMETRICAL CURVES.

No. 486,699.

Patented Nov. 22, 1892.



WITNESSES:

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INSTRUMENT FOR DRAWING GEOMETRICAL CURVES.

SPECIFICATION forming part of Letters Patent No. 486,699, dated November 22, 1892.

Application filed April 19, 1892. Serial No. 429,709. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. DAVIS, of the city, county, and State of New York, have invented a new and improved Draftsman's
5 Compass, of which the following is a full, clear, and exact description.

The invention relates to drawing-instruments; and its object is to provide a new and improved draftsman's compass which is simple and durable in construction and more
10 especially designed for conveniently and rapidly drawing spiral lines, ovals, ellipses, and other curvilinear geometrical lines and figures.

The invention consists principally of a cord
15 connected with one of the legs of the compass and adapted to wind on a drum mounted to rotate loosely on the spindle held on the other leg at the joint of both legs.

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

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

Figure 1 is a perspective view of the improvement. Fig. 2 is a plan view of a modified form of the improvement.

30 The compass is provided with the legs A and B, of which the leg B is pivoted in the head C of the leg A. The leg A is provided with the usual point D and the other leg B carries a pen, pencil, or other device for drawing the desired line. On the leg B, preferably
35 on the joint E, is journaled a roller F, to which is attached one end of a cord or thread G, extending under a pulley H, journaled on the other leg A. The cord or thread then extends
40 upward and passes over a pulley I, journaled in the outer end of a rod I', attached to and projecting from the head C of the leg A.

The cord or thread G then passes to a sleeve J, on which it may be fastened or adapted to
45 be wound thereon, as hereinafter more fully explained. The sleeve or drum J is mounted to turn on a pin K, extending upwardly from the head C, and on the upper end of this pin is fastened a knob or handle L for conveniently turning the instrument so that the leg
50 B moves around the leg A, as hereinafter more fully described. From the drum or

sleeve J extends outwardly a rod N, carrying a ring O, adapted to be engaged by one of the fingers of the operator's hand when using the
55 instrument. On the sleeve or drum J is also secured a bar P, extending to both sides of the sleeve and on which is adapted to wind the cord or thread G for the purpose presently to be described. A spring Q is attached
60 with one end to the head C and presses with its free end on the leg B, so as to return the same to an outermost position and to hold the said leg in proper position while drawing the
65 desired line.

The instrument is used as follows: For drawing spiral lines the upper end of the cord or thread G is preferably attached to the bar P and then wound several times around the sleeve or drum J, after which it is extended
70 to the pulleys I, H, and F, as shown and described. The point D of the leg A is then placed on the desired center of the line to be drawn and the leg B is extended outwardly to the outer end of the line to be drawn. The
75 operator takes hold with his thumb and forefinger and places the little finger into the ring O. By now turning the knob L without changing the position of the hand the leg B revolves around the leg A, the point of which
80 is held in the center in the usual way. Now it will be seen that as the leg A revolves with the point D remaining in the center the arm I', carrying the pulley I, moves with it, and as the drum J is held stationary by the finger-
85 ring O and rod N the cord or thread winds up on the drum or sleeve J and in doing so draws the leg B inwardly, the latter swinging from the joint in the head C toward the other leg A. As this operation is continued the leg B
90 is gradually drawn in toward the other leg A, and consequently the distance between the two legs becomes gradually less, so that a spiral will be drawn. It will be seen that the leg B is always held sufficiently taut to pre-
95 vent the said legs from closing too rapidly toward the leg A. When it is desired to draw ovals, ellipses, and other curvilinear geometrical lines and figures, then a disk R (see Fig. 2) of corresponding form is used in the place
100 of the arm P and a double thread T is attached to the arm I', arranged opposite the arm I', and the two parts of the thread T are passed over the periphery of the disk R to be

attached to the thread G at or near the pulley I. Now when the device is used in the manner above described the cord or thread G is drawn in or let out, according as the double thread is acted on by the disk. In doing this it is understood that the leg B is drawn toward the leg A, when a pull is exerted on the cord or thread G at the time the widest part of the disk R moves away from the pulley I and until this widest part stands at right angles to the arms I' and I²; but when in the course of rotating the handle L the widest part moves toward the end of arm I², or toward the pulley I, then the cord becomes slack; but this is taken up at once by the action of the spring Q on the leg B, which is forced correspondingly outward. In this manner ovals, ellipses, and other figures can be drawn, it being understood, however, that for drawing such figures different lengths and forms of disks are used instead of the bar P.

It is further understood that in drawing spiral lines, as above described, the form of the spiral—that is, the distance between two adjacent lines—is regulated by using sleeves or drums J of different diameters, so that the winding up of the cord or thread G is more or less for each revolution made by the instrument.

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

1. In a drawing-instrument, the combination, with a compass, of a cord connected with one of the legs of the compass and a drum or sleeve mounted to rotate loosely on the spindle or pin held on the head of the compass, the said drum being adapted to wind up the said cord, substantially as shown and described.

2. In a drawing-instrument, the combination, with a compass, of a cord connected with one of the legs of the compass, a drum or sleeve mounted to rotate loosely on the spindle or pin held on the head of the compass, the said drum being adapted to wind up the said cord, and a device for holding the said drum stationary while the compass is turned, substantially as shown and described.

3. A draftsman's compass provided with a drum or sleeve mounted loosely on a spindle projecting from the head of the compass, a rod extending from the said drum and provided with a finger-ring for holding the said drum stationary while the compass is turned, and a cord connected with the said drum and with one of the legs of the compass, substantially as shown and described.

4. A draftsman's compass provided with a drum or sleeve mounted loosely on a spindle projecting from the head of the compass, a

rod extending from the said drum and provided with a finger-ring for holding the said drum stationary while the compass is turned, a cord connected with the said drum and with one of the legs of the compass, and a bar projecting from the said drum, substantially as shown and described.

5. A draftsman's compass provided with a drum or sleeve mounted loosely on a spindle projecting from the head of the compass, a rod extending from the said drum and provided with a finger-ring for holding the said drum stationary while the compass is turned, a cord connected with the said drum and with one of the legs of a compass, a bar projecting from the said drum, and a spring pressing on the said leg, to which the cord is fastened, substantially as shown and described.

6. In a drawing-instrument, the combination, with a compass provided on its head with a spindle or pin carrying a knob or handle, of a sleeve held loosely on the said spindle and provided with a finger-ring for holding the drum stationary while the compass is turned, and a cord or thread connected at one end with the said drum and passing over pulleys held on one of the legs to engage and connect with the other leg of the compass, substantially as shown and described.

7. In a drawing-instrument, the combination, with a compass provided on its head with a spindle or pin carrying a knob or handle, of a sleeve held loosely on the said spindle and provided with a finger-ring for holding the drum stationary while the compass is turned, a cord or thread connected at one end with the said drum and passing over pulleys held on one of the legs to engage and connect with the other leg of the compass, and a bar held on the said drum and adapted to engage the cord or thread, substantially as shown and described.

8. In a drawing-instrument, the combination, with a compass provided on its head with a spindle or pin carrying a knob or handle, of a sleeve held loosely on the said spindle and provided with a finger-ring for holding the drum stationary while the compass is turned, a cord or thread connected at one end with the said drum and passing over pulleys held on one of the legs to engage and connect with the other leg of the compass, a bar held on the said drum and adapted to engage the cord or thread, and a spring pressing one of the said legs outward, substantially as shown and described.

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Witnesses:

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