L. BURKE.

ELLIPSOGRAPH.

APPLICATION FILED MAR. 7, 1911.

1,026,560.

Patented May 14, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

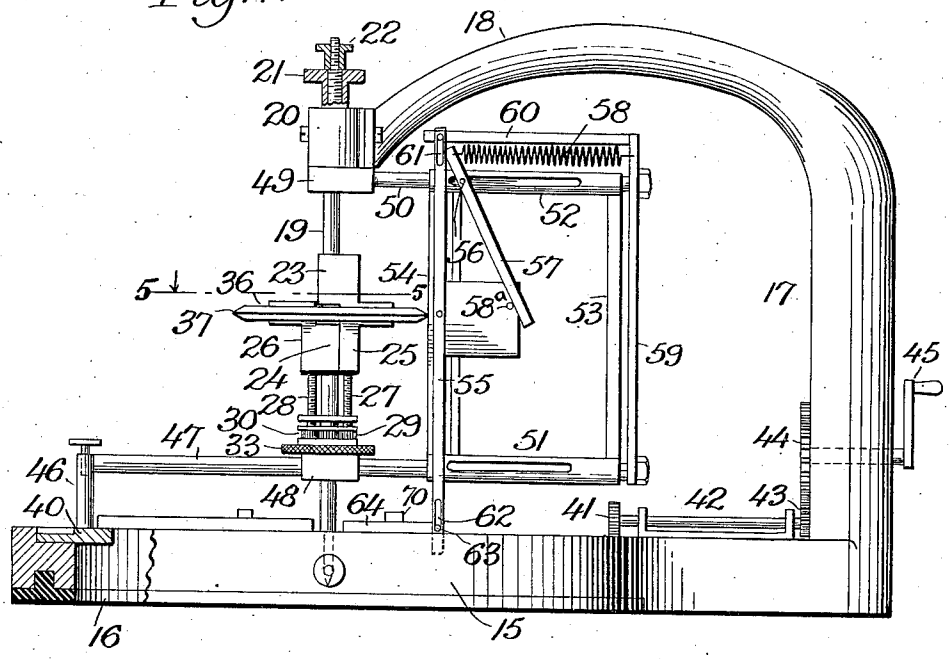
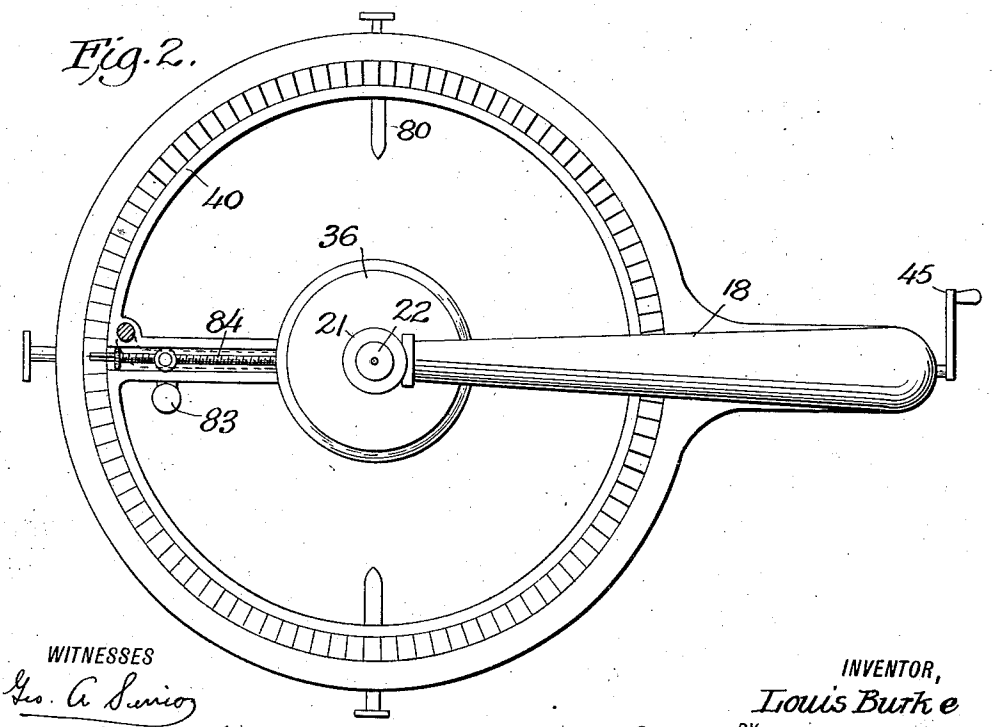


Fig. 2.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 3.

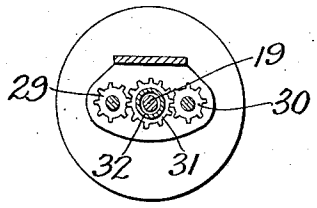


Fig. 4.

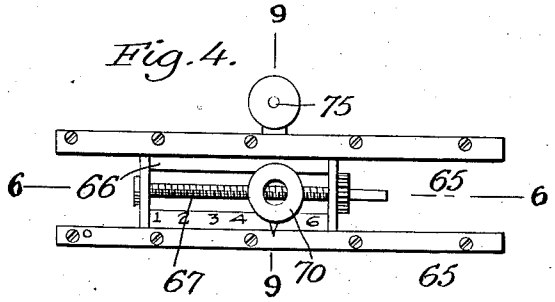


Fig. 5.

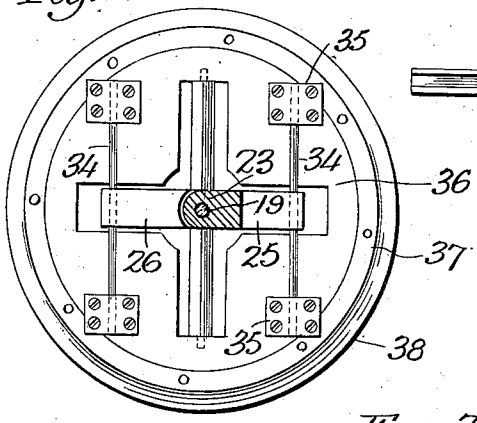


Fig. 6.

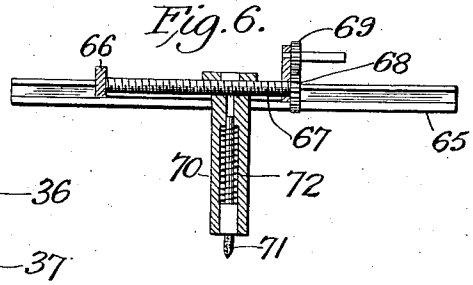


Fig. 9.

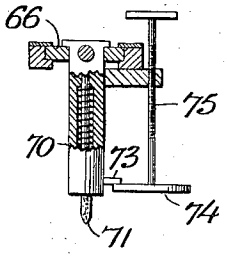


Fig. 7.

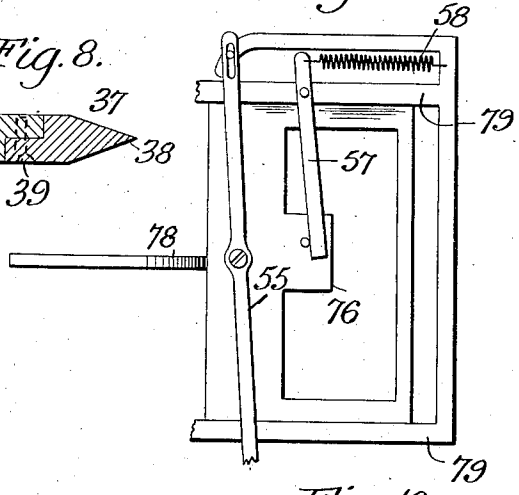
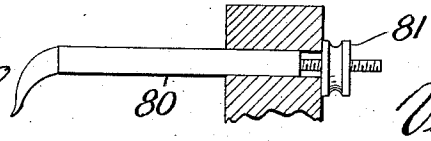


Fig. 8.

Fig. 10.



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ELLIPSOGRAPH.

1,026,560. Specification of Letters Patent. Patented May 14, 1912.

Application filed March 7, 1911. Serial No. 612,737.

To all whom it may concern:

Be it known that I, LOUIS BURKE, a subject of the Czar of Russia, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Ellipsographs, of which the following is a specification.

This invention relates to ellipsographs and it consists of a device readily adjustable for ellipses of different sizes and quickly operated to draw ovals and ellipses as will be more fully described in the following specification, set forth in the claims and illustrated in the drawings, wherein,—

Figure 1 is an elevation of the device partly in section. Fig. 2 is a plan view. Fig. 3 is a horizontal sectional view of the adjusting gearing. Fig. 4 is a plan view of the pencil adjuster. Fig. 5 is a sectional view taken on line 5—5 of Fig. 1 showing the mounting of the form disk. Fig. 6 is a sectional view of the pencil adjuster, approximately on line 6—6 of Fig. 4. Fig. 7 is a side elevation of the operating frame showing a modified construction. Fig. 8 is a detail sectional view. Fig. 9 is a cross sectional view of the pencil holder. Fig. 10 is a view of a centering pin.

The device is mounted on a circular frame 15 having a base 16 of rubber or similar frictional material and at one side an upright 17 with an arm 18 carrying a shaft 19 which is reduced at its upper end and locked within the head 20 by means of the lock nuts 21 and 22. This shaft 19 extends downward and is pointed to designate the center of the circle or ellipse to be drawn. The shaft 19 is provided with sleeves 23 and 24 and to the former is secured a block 25 while the latter also has a block 26, both of which are provided with threaded perforations in which play the screws 27 and 28 threaded in opposite directions and having at their lower ends pinions 29 and 30.

Interposed between the two pinions 29 and 30 is a pinion 31 carried by a sleeve 32 having on its lower end a thumb wheel 33, the rotation of which causes the screws 27 and 28 to rotate in opposite directions and carries the blocks 25 and 26 up and down on the shaft 19.

As will be seen in Fig. 5, the blocks 25 and 26 are provided with horizontal portions whose outer ends carry rods 34 which are journaled in boxes 35 on a disk 36. This disk 36 is preferably provided with a ring 37 having a sharp outer edge 38, the disk and the ring being secured together by means of screws 39.

The above described mechanism is adapted to shift the disk 36 so as to throw it at an angle, a plan of which is an oval whose shorter diameter is regulated by the inclination of the disk.

Within the frame 15 is a ring 40 with gear teeth in its outer edge and adapted to slide around the frame. Meshing with the teeth of the ring is a pinion 41 on a shaft 42 which is rotated by means of the gear wheels 43 and 44, the latter being provided with a crank arm 45. Connected with the ring 40 is a post 46 having at its upper end the horizontal rod 47, through which the shaft 19 passes, the rod being provided with a block 48 at that point. The upper end of the shaft 19 is also encircled by a block 49 carrying the horizontal rod 50. Both of these rods carry sleeves 51 and 52 connected by uprights 53 and 54 and which comprise a frame having levers 55 at each side and which are pivoted at a point on line with the disk 36 when it occupies a horizontal position. The sleeve 52 is slotted and through the slot passes the pivot 56 of a lever 57 having at its upper end the tension spring 58 while its lower end plays against a pin 58ª carried by the upright 54 so that the frame is pushed forward causing the upright 54 to bear on the edge 37 of the disk.

In order to strengthen the rods 47 and 50 they are connected by means of the bar 59, and the lever 55 is pivoted to an arm 60 by means of a slotted connection 61 while its lower edge is also slotted at 62 and through this slot plays a pin 63 carried by the pencil holder 64. The pencil holder is best shown in Figs. 4, 6 and 9 where it will be seen that two guide-ways 65 are provided for a sliding frame 66, carrying an adjusting screw 67 which is operated by the gear wheels 68 and 69. Guide ways 65 comprise spaced parallel bars formed integrally with the ring 40 each of which have their inner surfaces formed to provide grooves adapted to slidably support the frame 66. On the adjusting screw 67 is a vertical pencil carrier 70 which slides in the frame 66, the carrier being hollow and carrying the lead 71 which is pressed downward by means of a spring 72. The downward movement of the pencil is limited by means of a pin 73 which presses

against the stop 74 which may be adjusted by means of the screws 75 to any desired height.

The modified form shown in Fig. 7 consists of a frame 76 playing on the flat edge of a disk 78 and having the usual lever 55 for operating the pencil and the lever 57 for producing a pressure on the frame. The frame 76 slides in guide-ways 79 and the usual tension spring 58 is provided.

In order to properly locate the device, adjustable pins 80 are provided to mark its location on the paper or board where it would be otherwise difficult to center the figure by means of the shaft 19. These pins 80 are threaded at their outer ends and provided with nuts 81 to properly adjust them.

It is obvious that the device may be modified and the parts otherwise arranged without departing from the essential features above described.

In Fig. 2 a pencil holder 83 is shown which may be adjusted by means of a screw 84 so that it can be used as an ordinary beam compass and circles drawn by the device.

What I claim as new and desire to secure by Letters Patent is,—

1. In an ellipsograph, the combination with a supporting frame, of a rotating ring, a vertical shaft, a tilting disk on the shaft, means for tilting the disk and a shifting frame carried by the ring and adapted to operate a pencil.

2. In an ellipsograph, the combination with a frame, of a rotating ring within the frame, a vertical shaft carried by the frame, a tilting disk on the shaft, means for tilting the disk, a shifting frame bearing on the disk and carried by the ring, a slide on the ring, a pencil carrier in the slide and a lever connecting the shifting frame with the pencil slide.

3. In an ellipsograph, the combination with a circular frame having a frictional lower surface, of a rotating ring in the frame, means for rotating the ring, a shaft carried by the frame, horizontal rods journaled on the shaft and connected with the ring, a sliding frame on the rods, a tilting disk on the shaft, adjusting screws adapted to tilt the disk, a sliding pencil carrier and a lever connecting the sliding frame with the pencil carrier.

4. In an ellipsograph the combination with a circular frame having an upright, of a rubber base for the frame, a rotating ring in the upper side of the frame, gearing adapted to rotate the ring, a vertical shaft carried by the upright, horizontal arms rotating about the shaft, a tilting disk, blocks carrying the tilting disk, sleeves on the shaft and carrying the blocks, adjusting screws playing in the blocks, a thumb nut operating the adjusting screws, a shifting pencil carrier operating on guide-ways, a shifting frame carried by the rods and bearing against the edge of the disk, a lever connecting the shifting frame with the pencil carrier, and a lever with a spring carried by one of the rods and bearing against the shifting frame.

In testimony whereof I affix my signature in presence of two witnesses.

LOUIS BURKE.

Witnesses:
JAMES F. DUHAMEL,
CHARLES LA RUE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."