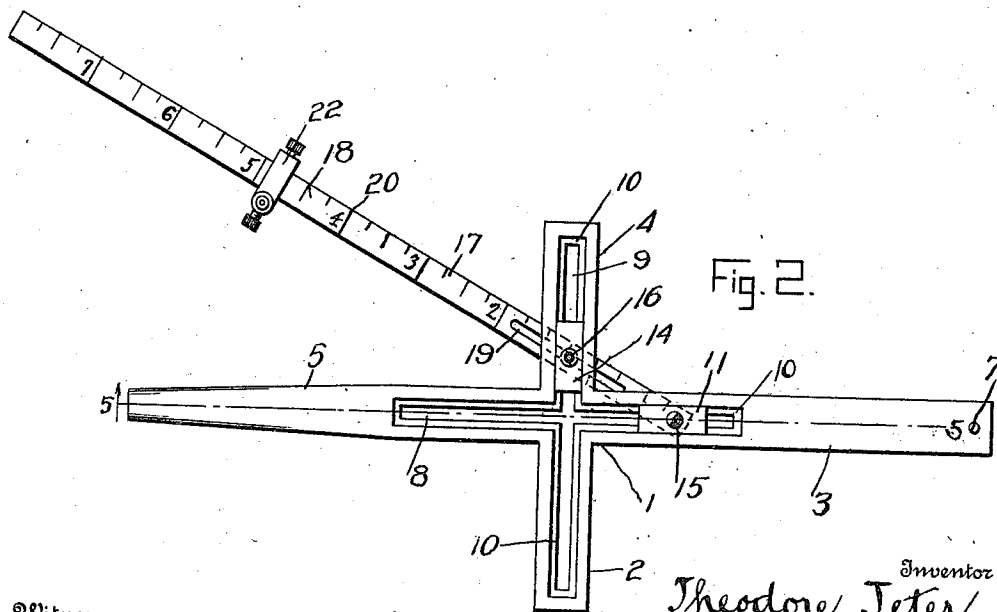
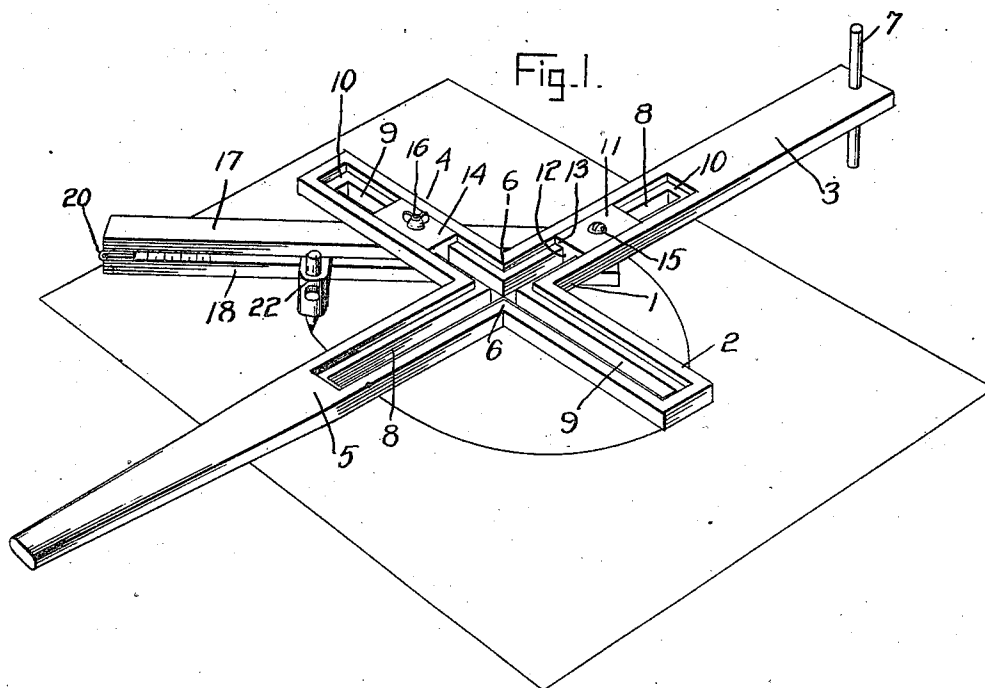


973,047.

T. JETER.
ELLIPSOGRAPH.
APPLICATION FILED FEB. 6, 1909.

Patented Oct. 18, 1910.

2 SHEETS—SHEET 1.



Witnesses

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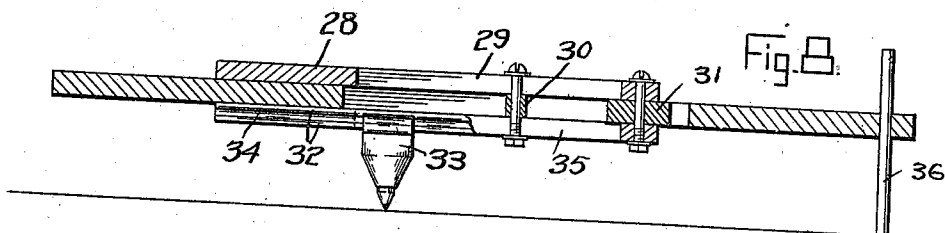
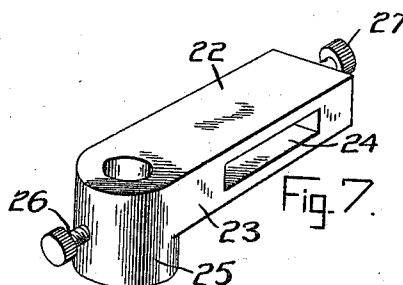
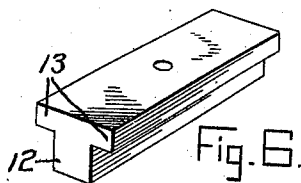
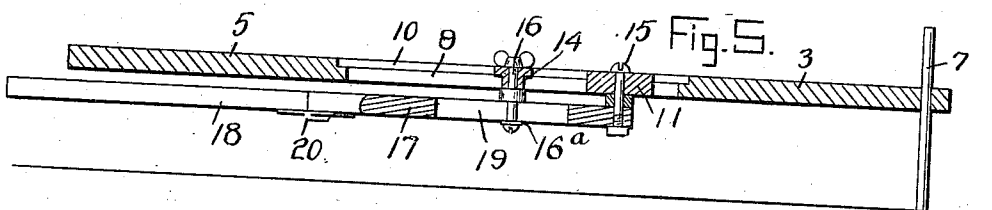
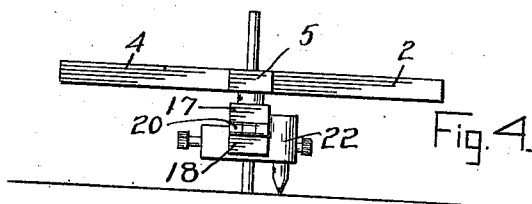
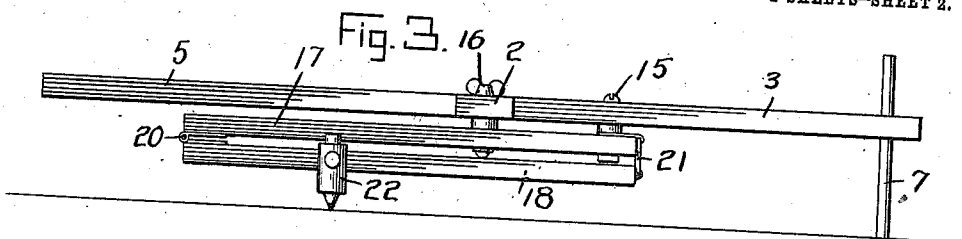
By

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2 SHEETS-SHEET 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

THEODORE JETER, OF CHAMPAIGN, ILLINOIS.

ELLIPSOGRAPH.

973,047.

Specification of Letters Patent.

Patented Oct. 18, 1910.

Application filed February 6, 1909. Serial No. 476,563.

To all whom it may concern:

Be it known that I, THEODORE JETER, a citizen of the United States, residing at Champaign, in the county of Champaign and State of Illinois, have invented certain new and useful Improvements in Ellipsographs, of which the following is a specification.

This invention relates to ellipsographs.

10 The object is to present a device for marking or cutting ellipses, and to be of the simplest possible form, thus combining the advantages of inexpensiveness and readiness in manufacture, and yet be absolutely accurate in its operation, and conveniently disposed and manipulated so that it will occupy only a limited space during operation, and requiring no intricate or cumbersome means for supporting the same during operation.

20 I am aware that, heretofore, ellipsographs of various forms and constructions have been devised; but many of these with which I am familiar are of a most complicated character, requiring a large space while they are being manipulated, and are of costly manufacture; furthermore by reason of the numerous parts embodied therein these ellipsographs are difficult to manipulate and, in comprising many parts and members, become easily disorganized while being operated; furthermore, they require to be supported at two points at least, or have a large and cumbersome base or supporting body that must necessarily be in the way while the device is being operated.

30 With the objects stated, in view, my device comprises a cruciform supporting-frame, the four members of which radiate from a common central point, said frame being supported at or toward the end of one of the radiating members; said frame being also provided with two slots or grooves extending at right angles to each other and crossing each other at the central point heretofore mentioned; each of said members being incut contiguous to the walls of said slots or grooves; two slidable blocks or posts designed to travel freely but steadily in said slots or grooves, and having on their upper sides guiding flanges or extensions designed to engage said incuts whereby these blocks are easily but accurately manipulated and guided during the operation of the device and, at the same time, hold all of the ad-

35 junctive parts of the structure firmly and steadily to enable the same to mark or cut a clear and smooth line; and an instrument-supporting member or arm supported on said slidable blocks and capable of a circular movement over the upper surface of the supporting-frame.

The invention resides, further, in means for adjusting said instrument-supporting arm or member upon the blocks or posts.

60 The invention resides, further, in hinging or jointing said instrument-supporting arm or member intermediate of its ends, and mounting upon the outermost member thereof a movable instrument-supporting member or holder capable of being adjusted upon said outermost member of the arm, and carrying adjustable means for securing a cutter device, pencil or pen; said instrument-holder being capable of operating, either when the two members of the arm are folded upon each other, or when extended.

70 The invention resides, finally, in various novel details of construction, all as more fully hereinafter described and as illustrated.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, I have illustrated two embodiments of my invention, and wherein,

80 Figure 1 is a view in perspective of my preferred form of ellipsograph, the same being shown as being operated to describe an ellipse upon a sheet of paper: and the instrument-supporting arm being shown with its two jointed members folded upon each other; Fig. 2 is a view in plan of the same device, but with the instrument-supporting arm in its extended position, Fig. 3 is a view in side elevation; Fig. 4 is a view in front elevation; Fig. 5 is a view in vertical longitudinal section of the supporting-frame, with some of the parts appearing in elevation, and the transversely movable slide being shown in its central position; Fig. 6 is a detail view of one of the slidable blocks; Fig. 7 is a detail view of the instrument-holder detached from its supporting-arm; and Fig. 8 is a view of a modified form of my ellipsograph, and wherein there are two supporting-arms, one overlying and the other underlying the supporting frame, the latter carrying the cutting or marking instrument.

110

In these drawings, 1 represents the cruciform supporting-frame, comprising the four arms or members 2, 3, 4 and 5 which radiate from a common center 6. The two arms 2 and 4 are approximately the same length, as shown. The arm 3 is of a length greater than the length of either of the arms 2 and 4, and, preferably, greater than the length of these two arms combined. At its end, or intermediate of its ends, the said arm 3 is provided with a post, standard or pin 7 which is designed to be driven into, or upstand from, the drawing-board or its surface. This post or standard 7 is designed to support the entire frame and the parts which it sustains, which leaves the remaining part of the device absolutely free and unobstructed in its movements. The post 7 may be secured to the arm 3 in any desired manner, either by extending into the arm, as shown, or otherwise. In this instance, the frictional engagement of the arm 3 with the post is sufficient to hold said arm in position thereon. By extending into and through the arm, it has the advantage of permitting vertical adjustment of the frame thereon. The arm 5 is, likewise, of length greater than that of the two arms 2 and 4.

Extending lengthwise of the arms 3 and 5 and 2 and 4 are two slots or grooves, marked respectively 8 and 9, these two slots being at right angles to each other, as shown. The slots 8 and 9 are approximately of the same length.

The upper face of the supporting-frame, and contiguous to these slots 8 and 9, is incut to provide a guideway 10, for a purpose hereinafter specified. Sliding in the slot or groove 8 is a slidable block or post 11, of length greater than its width, and comprising a depending portion 12 which is designed to travel between the walls of the groove or slot 8, and, also, outward-extending flanges 13—13 which are designed to travel in the incut 10, already described. In the slot 9, there is a similar slidable block 14, similarly constructed and arranged. The block 11 carries a securing bolt or screw 15; and the block 14 carries a similar bolt or screw 16.

As shown in Fig. 5, the bolt 16 carries an annular piece or washer about midway of its ends, and occupying a position between the block 14 and the upper plane of a graduated arm presently to be described. The bolt is provided at its lower end with a bur or washer 16^a secured in place by a screw or other means.

Pivoted to the block 11 by the bolt 15 is a graduated arm or member (as shown in Fig. 2) composed of two parts 17 and 18. The part 17 is provided with a longitudinal slot 19 in which the bolt 16 is disposed. The set screw of the bolt 16 permits ready adjustment of the bolt in the slot 19 and the cir-

cumferential flange on the bolt serves as a support for the arm 17 on the block 14.

It will be understood that a circular movement of the arm 17 will cause the block 11 to travel backward or forward in the slot or groove. 8. Simultaneously, the block 14 travels at right angles in the slot 9. To this end, the bolts 15 and 16 permit free movement of the parts with which they are connected.

The members 17 and 18 are jointed or hinged at 20. The purpose of having these two hinged parts to constitute the arm or member is that the device may be utilized for marking or cutting ellipses of larger size, when desired. When ellipses of smaller sizes are being made, the member 18 underlies the member 17, as shown in Fig. 1, and is held securely in place by a hook 21 or other form of securement. When it is desired to make ellipses of larger size, the member 18 is unhooked from the member 17, and swung back until the two members 17 and 18 are in the same horizontal alinement and plane.

Slidably mounted upon the member 18 is a pencil-holder 22, shown in detail in Fig. 7, and comprising a body portion 23 in which there is a rectangular aperture or slot 24 through which the member 18 extends. At one side of the body 23 is a cylindrical post 25 in which the pencil, cutter, or other marker is to be disposed, the same being held in position by the set screw 26, which permits the pencil, etc., to be adjusted vertically, or to be reversed, (for purposes hereinafter explained.) It will be understood that the pencil or other marker is to be projected through the cylindrical post 25 to approximately the same distance as the post 7, so that the entire device will occupy a plane approximately horizontal. To hold the pencil-holder 22 adjustably upon the arm 18, the holder is provided with another set-screw 27, which engages the side of the member 18.

Both members 17 and 18 are graduated, as shown. The upper surface of both members is graduated, accordingly, with the usual inch-mark designations, whereby the sizes of the ellipses can be accurately predetermined. The designations begin with 1 at the pivotal point 15, and increase toward the extending end of both members. On the under face of the member 18, where it lies in alinement with the member 17, the markings or designations continue from those ending at the extremity of the member 17.

When the two members 17 and 18 are folded upon each other, as shown in Fig. 1, the holder lies below the lower surface of the member 17, and the smaller sizes of ellipses can then be made, and the dimensions of the same be determined by the marking appearing on the upper face of this member 18. When larger sized ellipses are to be made, and the member 18 has been swung over to

position it in horizontal alinement with the member 17, the position of the holder is reversed and, therefore, the pencil or other marker is reversed accordingly.

5 The slot 19 in the member 17, with the adjustable bolt 16 provides for the various forms of ellipses, as will be well understood by those skilled in the use of this form of instrument.

10 The adjustability of the holder 22 determines the length of the ellipses, and the adjustability of the bolt 16 and the slot 19 determines the width. The provision of the hinged member 18 carrying the holder 22
15 also provides for the increase in length of the ellipses, as already explained.

The construction thus far explained possesses important advantages, in that it includes but few parts of exceedingly simple construction, making the device one which costs little to manufacture and which can be marketed at a reduced cost, accordingly. Moreover, by reason of the simplicity of the construction and the few parts of which the device is composed, there is great simplicity in the mode of operation, and the usual complicated and burdensome supporting devices employed in this form of device are dispensed with, and the operator need only
30 hold one end of the device in one hand while the other end is supported and poised on the post 7. I believe this manner of supporting the structure to be a novelty with me.

35 The parts are so disposed and arranged, relatively and coöperatively, that there is no looseness thereof nor, on the other hand, any binding to impede the easy manipulation of the entire structure; so that it is supported
40 for accurate and speedy operation, insuring accuracy in its results.

It is to be understood that this device is capable of employment for cutting glass, in which case a diamond-pointed instrument
45 may be substituted for the pencil or pen which is employed when the ellipse is to be marked upon paper or the like.

In Fig. 8, I have illustrated a modified form of structure and, in this instance, instead of there being but the one arm overlying the supporting-frame, I provide an overlying arm or lever 28, which is provided with a longitudinal slot 29, similar to the slot 19 in the member 17 in the form of instrument illustrated in Figs. 1 and 2. This
50 arm is connected with slidable blocks 30 and 31, similarly as in the preferred form already described. Underlying the supporting frame is an arm 32 upon which a slidable pencil-holder 33 is disposed, the arm
55 32 being provided with runways 34 in its sides to receive the upper portion of the pencil-holder 33. This arm 32 is provided with a longitudinal slot 35 corresponding
60 to the slot 29 in the arm 28. In this form

of device, the arm 28 is what I may term an operating arm and the arm 32 is the marker holding arm. This form of structure is supported at its end by a post 36 similarly as in the form already hereinbefore described. 70 The adjustment of the bolt 30 in the slide 29 provides for the change in the width of the ellipses, and the adjustability of the pencil-holder 33 provides for the changing of the length of the ellipses to be described. 75

The novelty of my structure resides in the fact that I have provided in a simple form of structure, a holder-supporting-member, comprising two parts arranged relative to each other for coöperation; said member 80 being pivotally connected to slidable blocks which travel in opposite directions during the circular movement of the said member, and which blocks are so constructed and arranged on the supporting-frame that their 85 movement is absolutely free and, yet, perfectly steady, whereby the perfect ellipse may be described; and, in connection with the structure thus described, of a marker-holder adjustable with relation to the pivot 90 al point of the arm, whereby the length of the ellipse may be increased,—the width thereof being regulated by the adjustability of one of the blocks to which the member is adjustably and slidably connected. 95

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

1. In an ellipsograph, the combination of a cruciform supporting-frame provided with 100 slots extending at right angles to each other, and also provided at but one end with a single relatively-stationary frame-support, slidable blocks traveling in said slots, a marker-supporting-arm pivotally connected 105 to said blocks, one of which blocks is adjustable longitudinally with relation to said arm, and a marker-holder adjustably supported upon said supporting-arm.

2. In an ellipsograph, the combination 110 with a supporting-frame provided with slots extending at right angles to each other, and also provided at but one end with a single relatively-stationary frame-support, slidable blocks traveling in said slots, a marker-sup- 115 porting-arm movably supported upon said blocks and provided with a longitudinal slot in which one of said blocks is longitudinally adjusted, and a marker-holder carried by said arm. 120

3. In an ellipsograph, the combination of a cruciform supporting-frame, means for supporting one end thereof, said frame being provided with slots extending at right angles to each other and having incut edges 125 or walls, slidable blocks traveling in said slots and provided with flanges to engage said incuts, posts upstanding from said blocks, a supporting arm engaging said posts and provided with a longitudinal slot 130

in which one of said posts is longitudinally
adjusted, a hinged member carried by said
supporting-arm and overlying the same for
making small ellipses, and constructed to be
5 swung back into horizontal alinement with
said arm for making larger ellipses, and the
marker-holder carried by said hinged mem-
ber, the said arm and member being gradu-

ated, and with relation to which gradua-
tions the said marker-holder is adjusted. 10

In testimony whereof I have affixed my
signature, in presence of two witnesses.

THEODORE JETER.

Witnesses:

FRANK C. SCHRAUB,

FRANK CASPER.