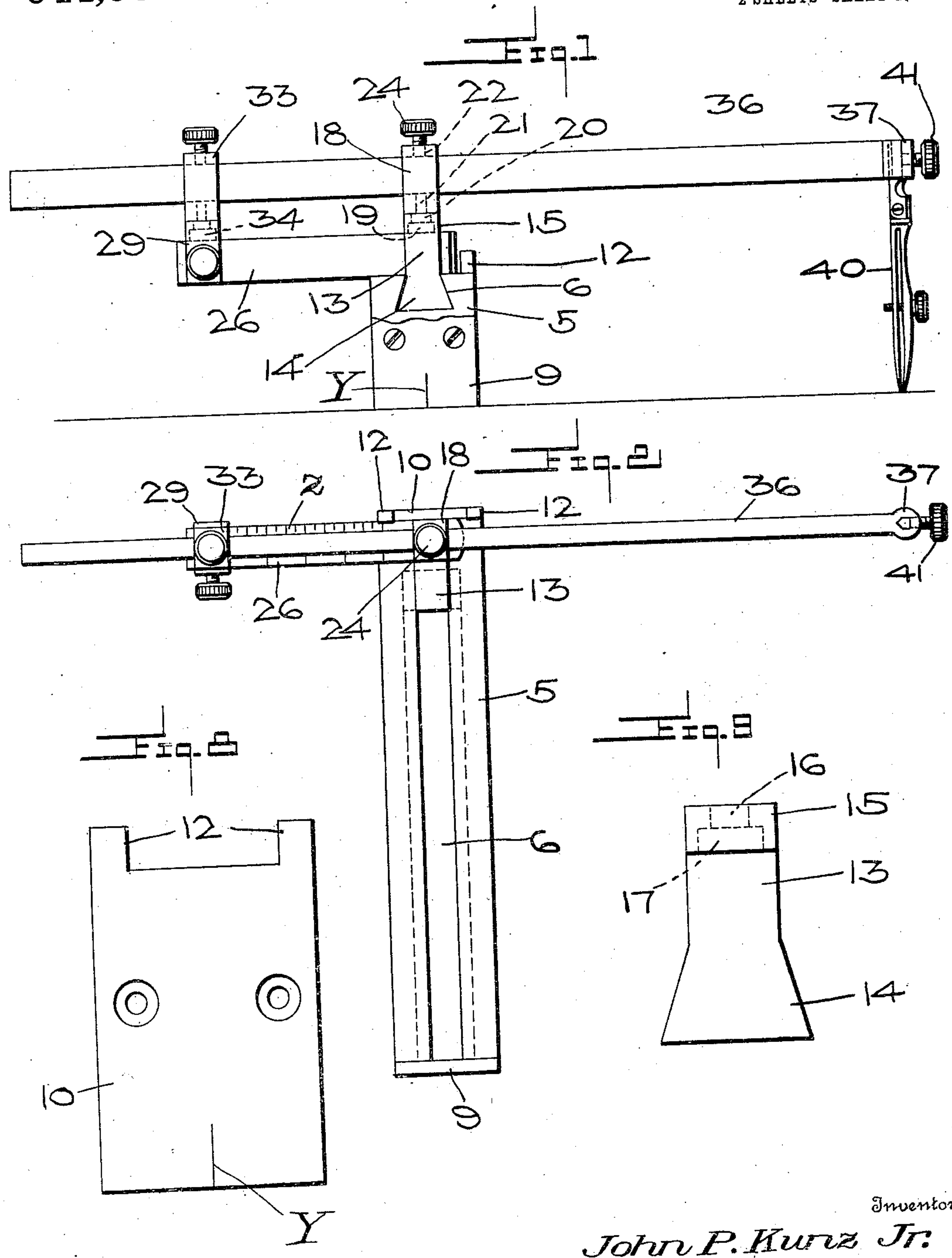


J. P. KUNZ, JR.
 ELLIPSOGRAPH.
 APPLICATION FILED MAR. 31, 1909.

Patented Dec. 28, 1909.
 2 SHEETS—SHEET 1.

944,562.



Inventor
 John P. Kunz Jr.

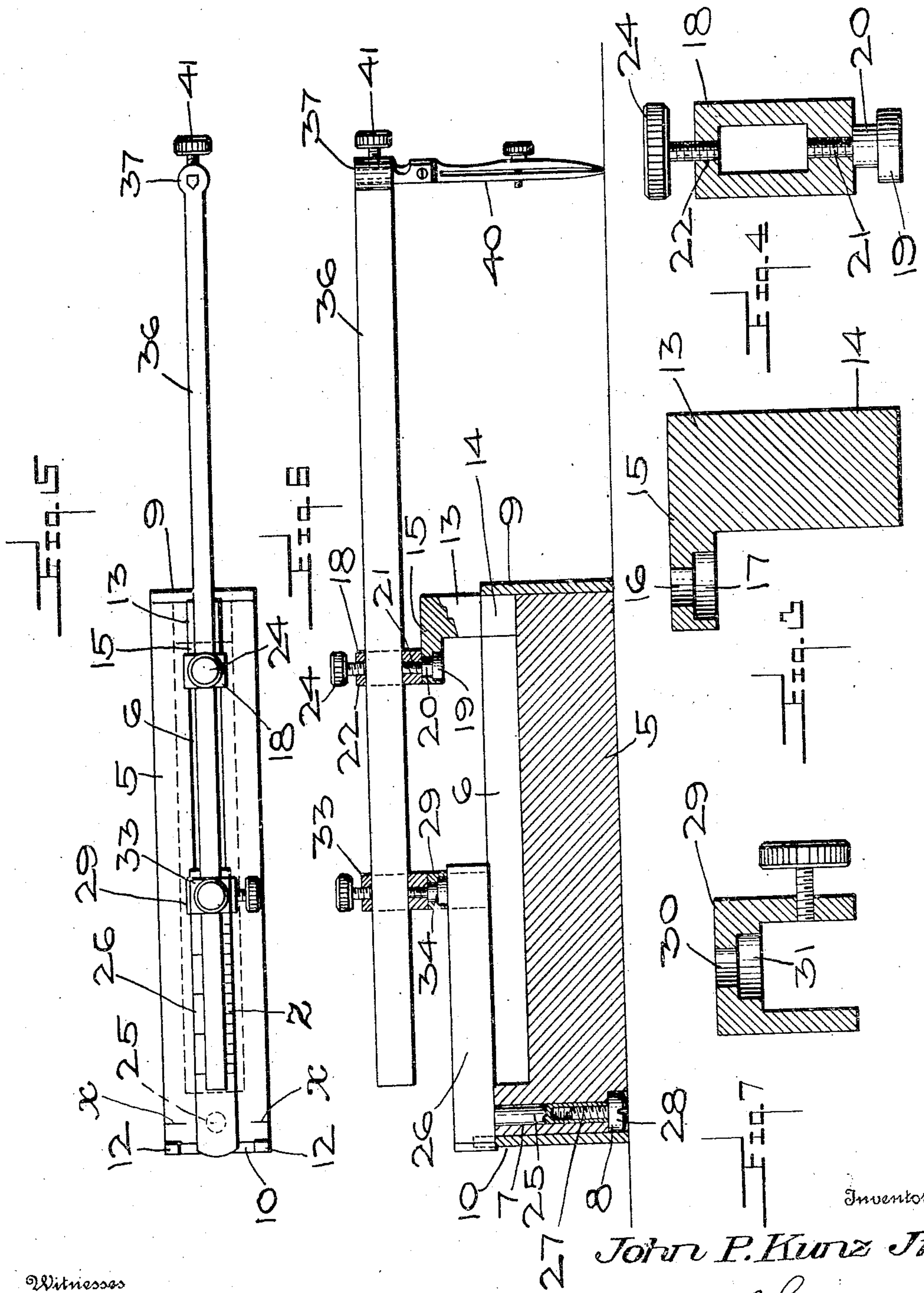
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UNITED STATES PATENT OFFICE.

JOHN P. KUNZ, JR., OF ST. LOUIS, MISSOURI.

ELLIPSOGRAPH.

944,562.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN P. KUNZ, JR., a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Ellipsographs, of which the following is a specification.

This invention relates to ellipsographs.

The object of my invention is, to provide a light, simply constructed, adjustable drawing instrument, so arranged that the same may be used to draw an ellipse, having a minor axis of a given length.

A further object is to provide an ellipsograph by means of which an ellipse may be drawn having a major and a minor axis each being of a predetermined length.

With these and other objects in view the present invention consists in the combination and arrangement of parts as will be hereinafter more fully described and particularly pointed out in the appended claims it being understood that changes in the specific structure shown and described may be made within the scope of the claims without departing from the spirit of the invention.

In the drawings forming a part of this specification and in which like characters of reference indicate similar parts in the several views, Figure 1 shows an end elevation of an ellipsograph constructed according to my invention, Fig. 2 is a top view, disclosing the traveling bar in one of its extreme positions, Fig. 3 is a central sectional view of the sliding block, Fig. 4 is a central sectional view of the sliding collar or union as used in my invention, Fig. 5 shows a top view disclosing the marking point in one of its extreme positions. Fig. 6 shows a central elevation of my ellipsograph. Fig. 7 is an enlarged detached detail of the adjusting yoke. Fig. 8 shows a front view of the stop plate. Fig. 9 shows an end view of the sliding carrier.

In my present invention, I provide a draftsman's instrument, constructed so that a half ellipse may be drawn at one setting of the instrument and by means of which an ellipse having a major and a minor axis of a predetermined length may be drawn.

In the drawings, 5 represents a metal bar forming a weighted base which carries the operating instrumentalities as used in my invention. This bar is provided with a middle lengthwise positioned dove-tailed

slot 6, which while entering one end of the base does not extend the full length of the base but terminates proximal to the socket 7, passing vertically through the base, the lower end of this socket being enlarged as shown at 8, to receive the counter-sunk head of a suitable securing screw.

The entering end of the slot is covered by means of the plate 9, while adjacent the opposite end, I provide the stop plate 10, having the stop ears 12, projecting upwardly. At points marking the transverse bi-section of the socket 7 relative to the base, I provide the gage marks X upon the sides, while the end plates 9 and 10 also have the points marking the bi-section of the socket 7 relative to the base indicated by the gage marks Y.

Slidably held within the slot 6, is the carrier 13. This carrier is provided with the dove-tailed base 14, and the projecting head 15 having the aperture 16 which has its lower portion enlarged as shown at 17, and shown in Fig. 3. The construction of this carrier 13 is such that when the head 15 projects beyond the socket 7 the aperture 16 will squarely register with the socket 7.

Revolubly held within the apertures 16 and 17 is a screw having the head 19, the neck 20 and the threaded stem 21. The head and neck are respectively held within the openings 17 and 16 within the head 15. Screwed to the stem 21 is the rectangular yoke 18 which forms a union which will be later described and which is provided with the threaded opening 22 and the set screw 24.

Pivotally held within the socket 7 is the pivot pin 25, which laterally projects from the square arm 26, this pin being interiorly threaded to receive the stem 27 of the set screw 28, the head of this screw 28 being held within the counter-sunk opening of the socket 7. This construction permits a free swinging movement of the arm 26. This arm 26 is of a length less than the length of the base 5. Adjustably held upon and striding this arm 26 is the yoke 29 shown in sectional detail in Fig. 7 and this yoke is provided with the aperture 30 which at its lower end is enlarged as shown at 31 to revolubly receive the swiveled head of the yoke 33 having the set screw 34.

Adjustably carried within the yokes 18 and 33 is the bar 36 having the enlarge-

ment 37 arranged to receive the pen or pen point 40 held by means of a suitable set screw 41 as clearly disclosed in Fig. 5.

The upper face of the swinging arm 26 is provided with the scale graduations z , so that the yoke 29 may be placed at any predetermined point upon this arm 26.

The instrumentalities having been properly assembled, the instrument would be used as follows: Two lines crossing one another at right angles are first drawn, to represent the major and minor axis of an ellipse. The base 5 is then so placed that the gage marks y register with the major axis, while the gage marks x are made to register with the minor axis. The arm 26 is then carried into one of its extreme positions, which is determined by means of one of the stop ears 12, as shown in Fig. 2 for instance. The set screws 24 and 34 are then loosened so that the bar 36 may be freely moved within the union or yoke 18, and the yoke 33. The marking point is then carried out to the point upon the minor axis marking half the minor diameter of the ellipse. The yoke 33 is then set relative to the graduations z at a point properly marking the length of the desired major axis, that is when it is required to draw an ellipse having two given diameters. The set screws 24 and 34 are then secured when the union 18 is carried along the slot, the arm 26 later being carried in an opposite direction, to be finally stopped by the opposite shoulder 12. In this operation of the bar 36 the pen or pencil point will have marked one half of the desired ellipse. The base is then reversed and the remaining half of the ellipse is drawn.

The fullness or length of the ellipse is determined by the position of the yoke 33 upon the pivotally held arm 26.

The device is light, neat, simple of construction and positive in its operation.

And having thus described my said in-

vention, what I claim as new and desire to secure by United States Letters Patent is:—

1. The combination with a slotted base, of a carrier sliding within said base, a union pivotally held by said carrier, an arm pivoted at one end to said base, and a bar pivotally and adjustably secured to said union and said arm.

2. The combination with a slotted base, of a carrier sliding within said base, a union pivotally held by said carrier, an arm pivoted at one end to said base, a yoke adjustably carried by said arm, and a bar adjustably and pivotally secured to said union and said yoke.

3. The combination with a slotted base having a socket, of a carrier held within the slot of said base, an arm having a projecting pivot pin held within said socket, a yoke adjustably secured to said arm, a collar pivotally carried by said yoke, a carrier slidably carried within said slot, a union pivotally carried by said carrier, a bar slidably held within said collar and said union, a marking point carried by said bar, and means limiting the movement of said arm.

4. A base provided with a longitudinally positioned slot and a socket, of an arm having a pivot pin held within said socket, a yoke carried by said arm, a collar revolvably carried by said yoke, a carrier held within said slot, a union pivotally held by said carrier, a rod slidably held within said collar and said union, a marking point secured to said rod, and a plate having projecting stop ears limiting the movement of said arm.

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

JOHN P. KUNZ, JR.

Witnesses:

MICHAEL ZWICK,
HENRY L. MILLER.