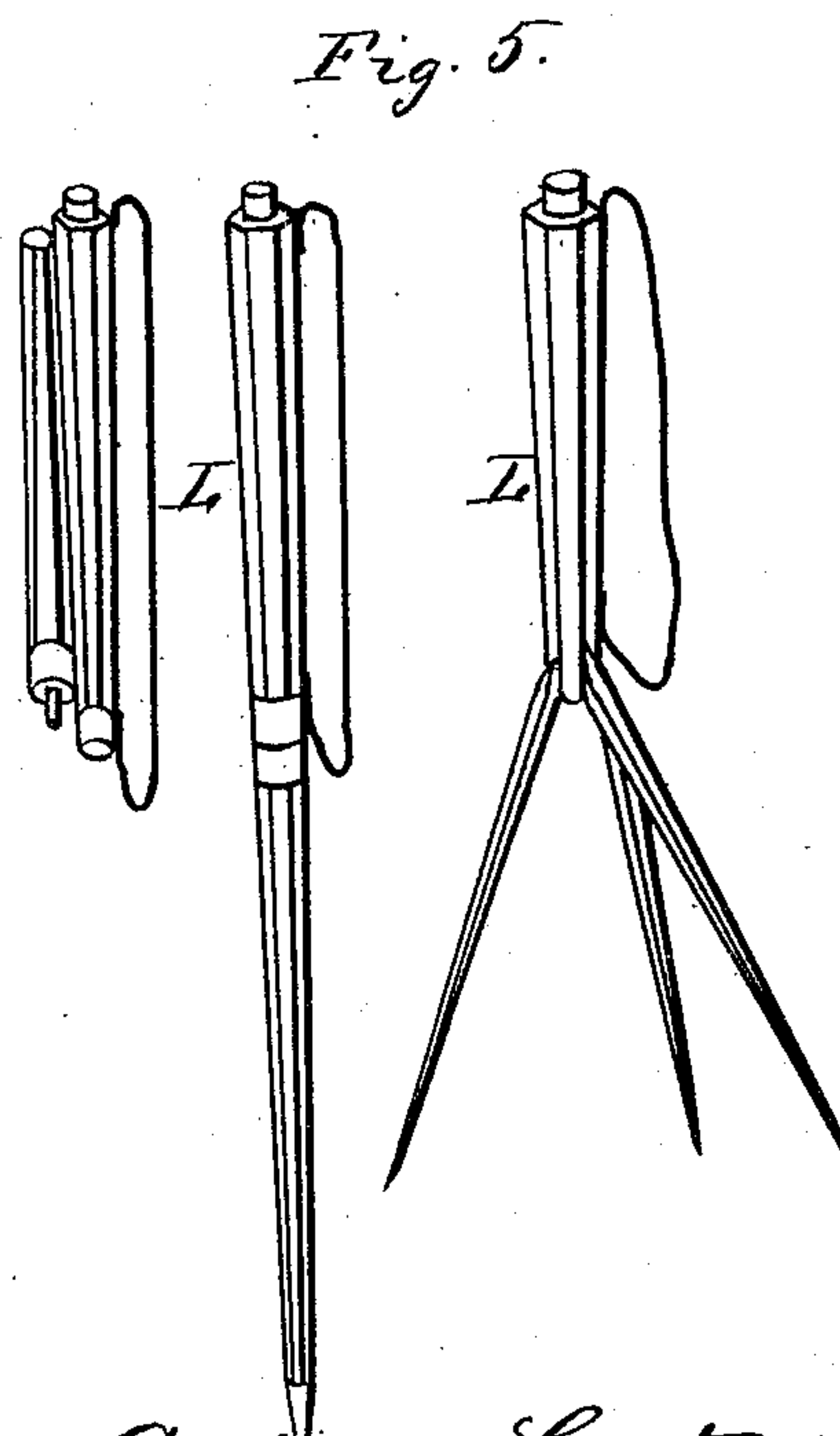
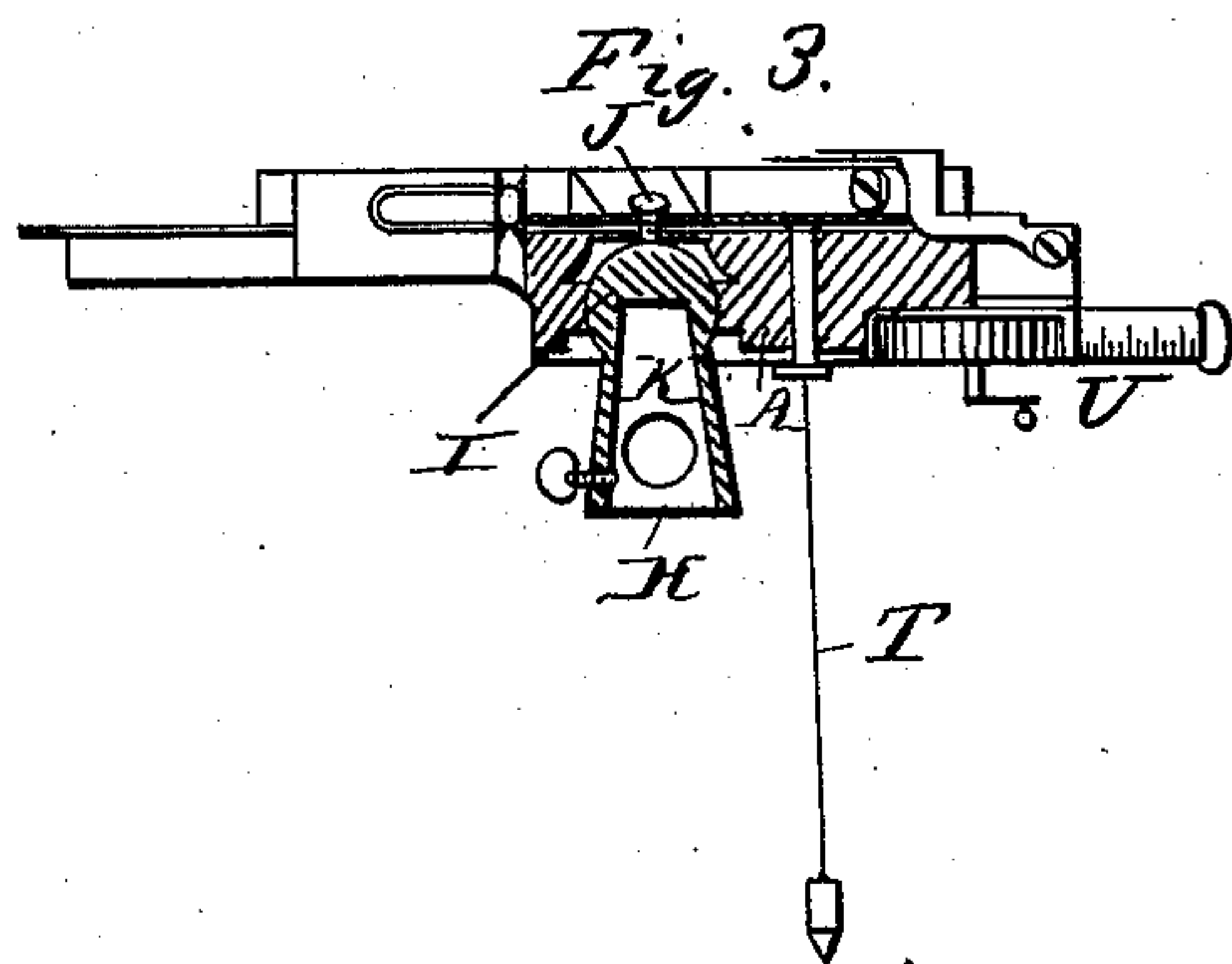
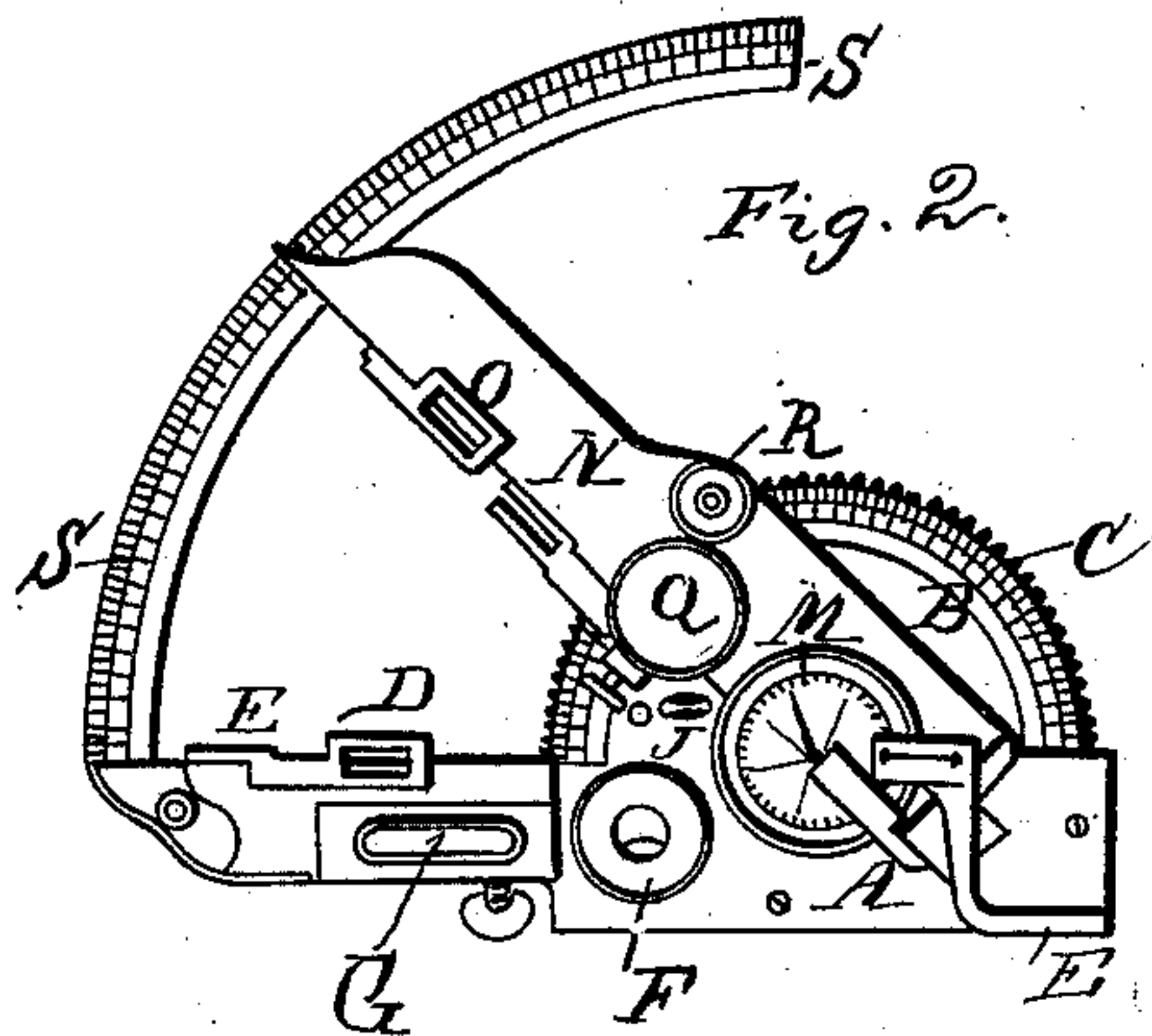
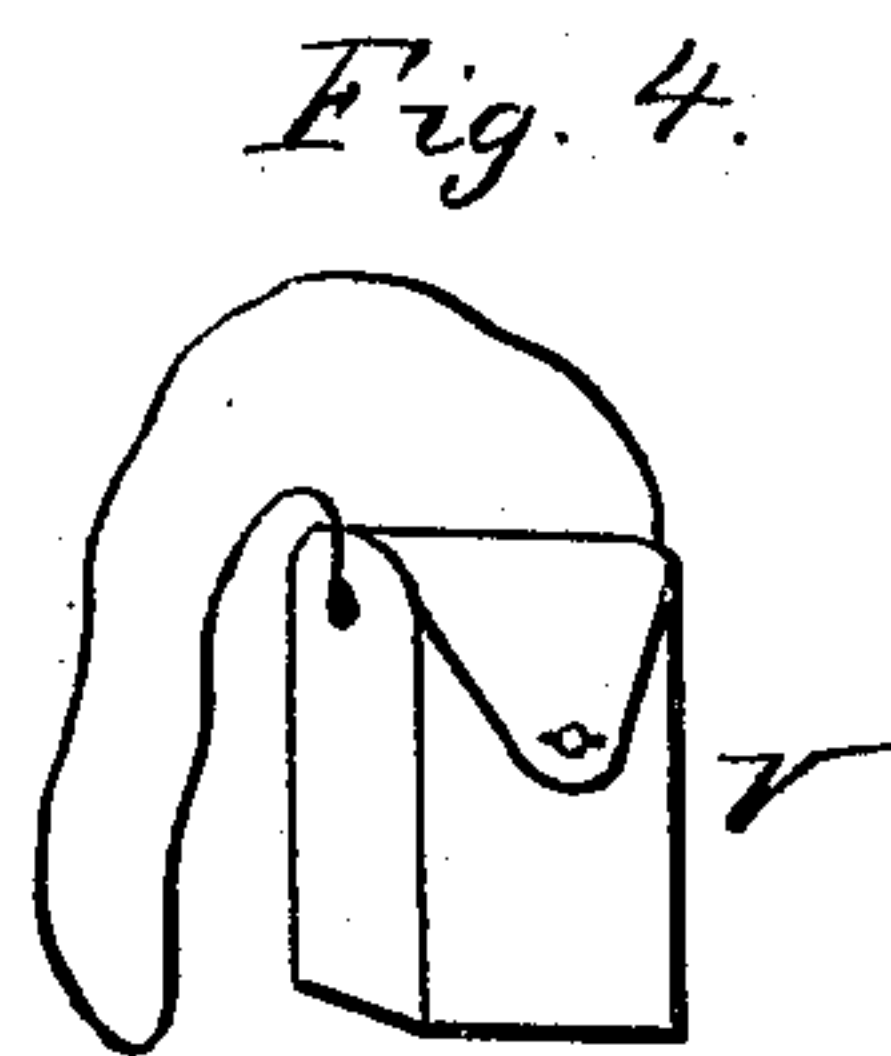
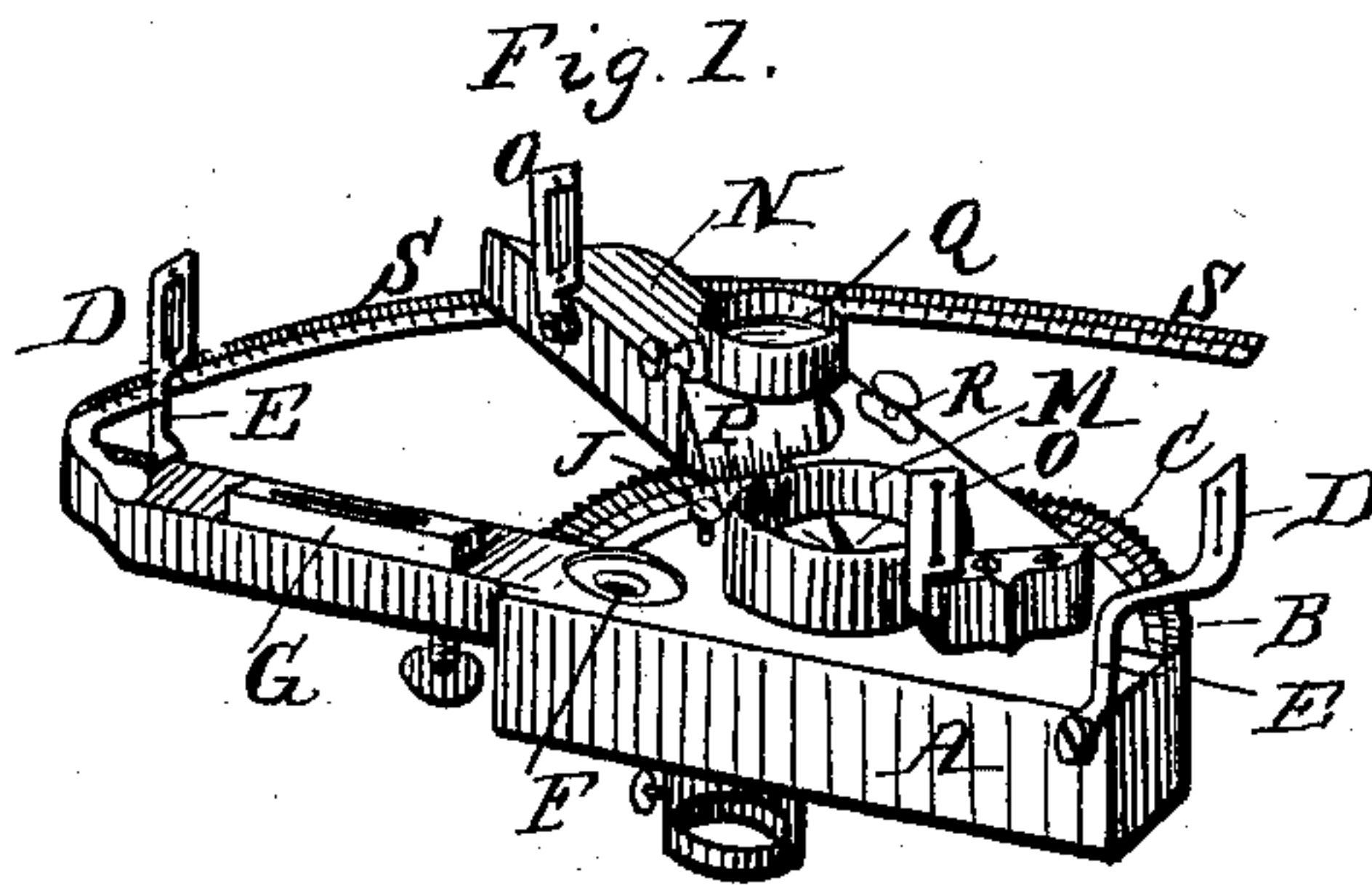


(No Model.)

A. COSTIESCO.
FIELD GRAPHOMETER.

No. 351,690.

Patented Oct. 26, 1886.



WITNESSES:
Wm. Baggett
H. O. McElmurry

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INVENTOR;
by: Louis Baggett & Co.
attys.

UNITED STATES PATENT OFFICE.

ANTOINE COSTIESCO, OF JASSY, ROUMANIA.

FIELD-GRAPHOMETER.

SPECIFICATION forming part of Letters Patent No. 351,690, dated October 26, 1886.

Application filed November 12, 1884. Serial No. 147,798. (No model.) Patented in France April 3, 1883, No. 154,649; in Belgium April 7, 1883, No. 61,012; in Germany March 5, 1884, No. 29,359; in Austria-Hungary March 6, 1884, No. 9,293/954 and No. 22,385/875, and in Italy April 1, 1884, 16,675, XVIII, and 138, XXXIII.

To all whom it may concern:

Be it known that I, ANTOINE COSTIESCO, of Jassy, in the Kingdom of Roumania, have invented certain new and useful Improvements in Field-Graphometers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of my improved field-graphometer. Fig. 2 is a plan view of the same. Fig. 3 is a vertical transverse sectional view. Fig. 4 is a perspective view of the case in which the apparatus may be carried, and Fig. 5 is a view illustrating the support or tripod in its various positions.

The same letters refer to the same parts in all the figures.

This invention relates to field-graphometers; and it has for its object to provide a device or apparatus of this class which shall possess superior advantages in point of simplicity, durability, and general efficiency, and which shall be conveniently portable and easily manipulated.

With these ends in view the invention consists in the improved construction and arrangement of parts which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, A designates the body of my improved graphometer, from the inner straight-edge of which extends a semicircular plate or body, B, the edge of which is provided with a rack, C, and the periphery of which is laid out in half-degrees.

D D are pinules or sights provided with arms EE, by means of which they are pivoted to the sides of the body A in such a manner as to be capable of being folded down upon the latter, as shown in Fig. 2 of the drawings, the said sights being arranged to register with the straight-edge of the said body A. The said body is provided with a spherical level, F, and with an ordinary spirit-level, G, which will indicate when the device or apparatus is set in a horizontal plane.

The under side of the body A is provided

with a universal joint, H, against the ball I of which bears the point of a thumb-screw, J, inserted from the upper side through the body A, which latter may thus be adjusted to and retained in any desired position. The lower end of the said joint terminates in a socket, K, by means of which it may be attached to the upper end of the support or tripod L (shown in Fig. 5) when it shall be desired to adjust the apparatus in position for operation.

Mounted upon the plate A B, concentrically with the semicircular extension B, is a compass, M.

N is an alidade mounted concentrically with the semi-circle B and compass M, and equipped with folding pinules, O O. The said alidade is equipped with a vernier or sliding scale, P, beveled to a feather-edge registering with the scale upon the periphery of the semi-circle B, and graduated in suitable manner. It also has a magnifying-glass, Q, by means of which the vernier may more readily be read, and a pinion, R, by means of which the said alidade may be conveniently adjusted.

S is a graduated quadrant, extending from the end of the body or fixed alidade A concentrically with the semi-circle B. The point of the alidade N forms an indicator resting upon the said quadrant.

The under side of the body A B is equipped with a plumb-line, T, arranged concentrically with the semi-circle B, and it also has a casing containing a tape-measure, U.

V designates a suitable casing, constructed of leather or analogous material, in which the apparatus, when not in use, may be conveniently carried.

From the foregoing description the operation of the apparatus will be readily understood by those skilled in the art to which it appertains. It is simple in construction, accurate, and efficient for all purposes for which a device of this class is usually employed.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. A graphometer comprising the fixed alidade, mounted eccentrically to the semi-circle at its inner end upon a universal joint, and having a spherical level, a spirit-level, and

a plumb-line pending from the center of the semi-circle, substantially as and for the purpose shown and set forth.

2. In a graphometer, the fixed alidade having a graduated semi-circle extending from its straight-edge and provided with a rack at its periphery, in combination with the quadrant extending from the end of the said fixed alidade concentrically with the semi-circle, and the movable alidade mounted concentrically with the semi-circle and having a pinion engaging the rack upon the periphery of the latter, substantially as and for the purpose set forth.

3. In a graphometer, the combination of the fixed alidade, the graduated semi-circle extending from the straight-edge of the latter, and the movable alidade having a vernier beveled to a feather-edge and registering with the scale of the semi-circle, and a magnifying-glass arranged above the said vernier, substantially as and for the purpose set forth.

4. As an improvement in graphometers, the

herein-described device comprising a body or fixed alidade, and having a spherical level and a spirit-level, a laterally-extending graduated semicircular plate having a rack at its periphery and mounted eccentrically upon a ball-and-socket joint, a compass secured centrally upon the semicircular plate, a plumb-line pending from the center of the said plate, a tape-measure, and a movable alidade having a vernier registering with the scale of the semi-circle, a magnifying-glass arranged above the said vernier, and a quadrant extending from the end of the fixed alidade and read by the point of the movable alidade, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 30th day of January, 1884.

ANTOINE COSTIESCO.

Witnesses:

CAMILLE CHARROPPIN,
EMILE KANTER.