H. KNAB.

MICROMETRIC TRACING GAGE.

APPLICATION FILED APR. 21, 1917.

1,322,302. Patented Nov. 18, 1919.

Fig. 1

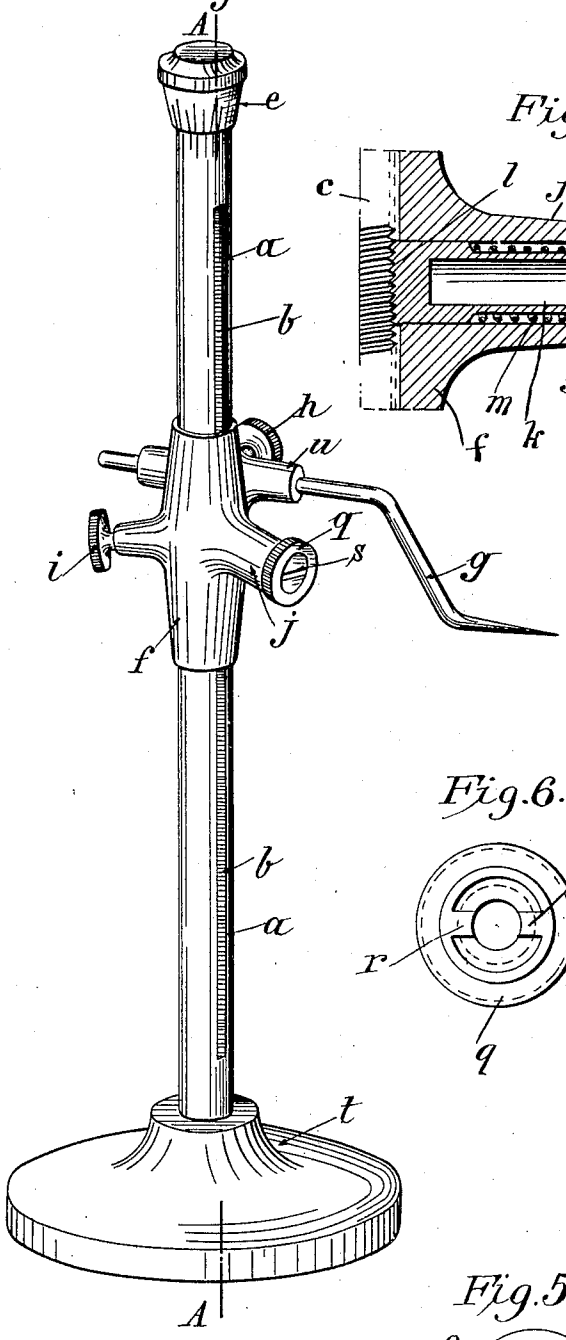


Fig. 3.

Fig. 2

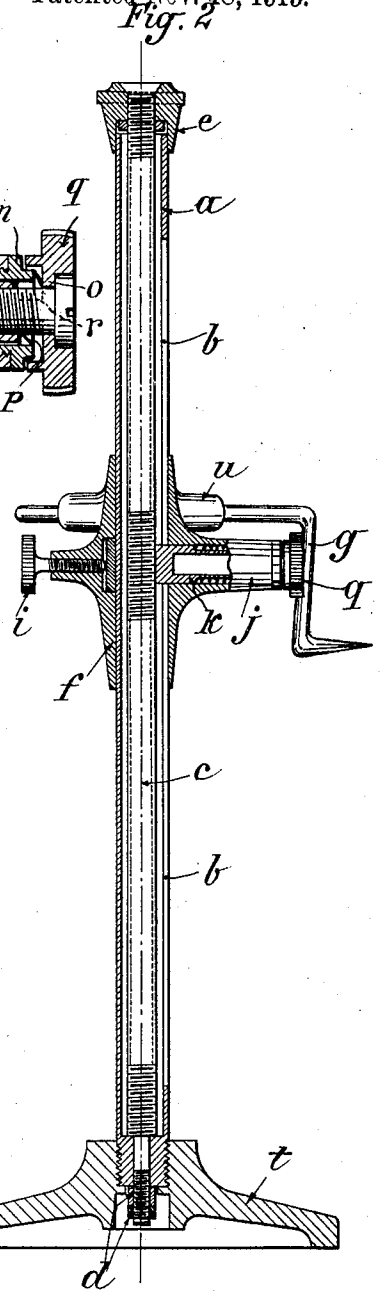


Fig. 6.

Fig. 5.

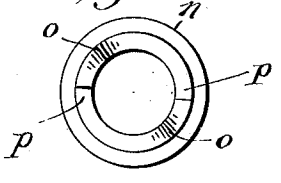
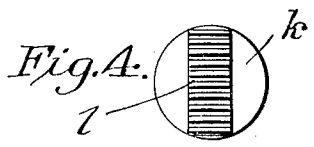


Fig. 4.



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MICROMETRIC TRACING-GAGE.

1,322,302. Specification of Letters Patent. Patented Nov. 18, 1919.

Application filed April 21, 1917. Serial No. 163,632.

To all whom it may concern:

Be it known that I, HENRI KNAB, citizen of the Republic of France, residing at 8 Rue du Chalet, Paris, in the Republic of France, have invented new and useful Improvements in Micrometric Tracing-Gages, of which the following is a specification.

The object of the present invention is a micrometric tracing gage which consists essentially of a slotted supporting tube mounted upon a base and containing a main screw operated by a milled vernier head; the main screw being thus adapted to rotate within the slotted base. This main screw engages with a threaded piece which forms part of a sliding piece movable upon the supporting tube and carrying the tracing point of the gage. A very simple device allows of throwing the threaded piece mounted on the sliding piece, out of contact with the main screw, so that the sliding piece can slide freely upon its supporting tube; the apparatus is completed by suitable means for clamping the sliding piece upon the supporting tube and also by a tracing point mounted upon the sliding piece.

The accompanying drawing represents an example of a method of execution of a micrometric tracing gage according to the present invention.

Figure 1 is a perspective view of the tracing gage;

Fig. 2 is a partial section along the axis, according to the line A—A of Fig. 1;

Fig. 3 is a larger scale view of a section of the coupling and uncoupling device for the threaded piece of the sliding piece, and the main screw;

Figs. 4, 5 and 6 are detail views in front elevation showing certain parts of this device.

Referring to Figs. 1 and 2 it is observed that the tracing gage comprises essentially a steel tube *a*, which is slotted as shown at *b*, and screwed or otherwise mounted upon a cast iron or steel base *t;* in the interior of the tube rotates a main screw *c* which is held in place by the lock nuts *d*, the screw being operated by a milled head *e* provided with a vernier graduation. The tube *a* acts as a support for a sliding piece *f* which carries the tracing point *g* of the gage, the point being clamped by the milled head *h*, while the sliding piece can be clamped upon the tube *a* by means of the milled head *i*. The sliding piece carries a cylindrical socket *j* which contains a cylindrical plug *k*, this latter being seen in front elevation in Fig. 4. Said plug carries at its end, as will be observed, a notched portion *l* having two plane parallel sides, whose distance apart is somewhat less than the width of the slot *b*. The portion *l* thus engages in the slot and is held in contact with the main screw by the spring *m* whose other end bears upon the nut *n* screwed into the socket *j*. Upon the head of this screw are two inclined ways *o*, separated by two depressions *p*, these being shown in section in Fig. 3 and in elevation in Fig. 5. Upon the milled head *q* (seen in elevation in Fig. 6) are two projections *r* adapted to work upon the inclined ways *o* or the depressions *p* of the nut *n*. This head is maintained in place by a screw *s* passing through it and which screws into the back part of the plug *k*.

When the projections *r* of the head *q* lie upon the depressions *p* of the nut *n*, the plug *k* comes in contact with the main screw by means of the notched piece *l*. By turning this head counter clock-wise, the projections *r* mount upon the inclined ways *o*, and this draws back the plug *k* so as to bring the threaded part *l* out of contact with the main screw. In this way, the head *q* allows of coupling and uncoupling the portion *l*.

The tracing gage is employed in the following way: The milled head *i* being turned so as to release the sliding piece and the head *q* being in the uncoupling position, the sliding piece is displaced along the supporting tube *a* so as to bring the tracing point *g* approximately to its working position. The point is suitably adjusted in its holder *u*, then it is clamped by the milled head *h*, after which the operating head *e* is rotated, and this allows of displacing the sliding piece *f* and with it the point *g*, within one-twentieth of a millimeter. Then the head *i* is turned to clamp the slide. To draw other lines parallel to the first, the slide is unclamped by the head *i*, and the distance between the lines is shown by the operating head *e*.

The advantage of the present tracing gage is that it allows of a rapid tracing of several lines in succession and at very exact distances, without needing the use of a graduated scale, and again, the point always remains horizontal and the line is sharp and clear.

The tracing gage above described is shown

as an example of the present invention, and it is understood that it can be modified in its shapes, materials, dimensions and details without in any way departing from the principles of the present invention.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A micrometric tracing gage comprising in combination: a base, a slotted tube mounted upon said base, a main screw rotating within said slotted tube, a head which rotates said main screw, a sliding piece movable along said slotted tube and provided with inclined surfaces, a tracing point, means for clamping the tracing point in said sliding piece, a plug adapted to longitudinally slide in the sliding piece in a direction transverse to the length of said main screw and having a notched part which is adapted to engage with the main screw, a spring acting to press the notched part of the plug into engagement with the main screw, a rotating member having surfaces adapted to ride upon rotation upon the inclined surfaces on the sliding piece and disengage the notched part from the main screw and means for holding the rotating member and the plug against relative displacement, substantially as described and for the purpose set forth.

2. A micrometric tracing gage containing in combination: a base; a slotted tube mounted upon said base; a main screw rotating within said slotted tube; a head which rotates said main screw; a sliding piece movable on said slotted tube; a holder mounted on the sliding piece; a tracing point movable within said holder; a set screw for clamping the tracing point in said holder; a cylindrical socket on said sliding piece; a cylindrical plug movable within said cylindrical socket and provided with a notched part engaging in the slot of the aforementioned tube and adapted to enter in contact with the main screw; a nut screwed at the end of said cylindrical socket and having a head provided with two rising inclined ways and two depressions; a spring placed between the cylindrical plug and said nut and adapted to press the notched part into engagement with the main screw; a milled head provided with two projections of less width than that of the depressions on said screw and adapted, upon rotation, to disengage the notched part from the main screw; a screw which is threaded into said cylindrical plug so that its head shall retain said milled head; substantially as described and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRI KNAB.

Witnesses:
LOUIS MOSES,
CHAS. P. PRESSLY.