

No. 710,242.

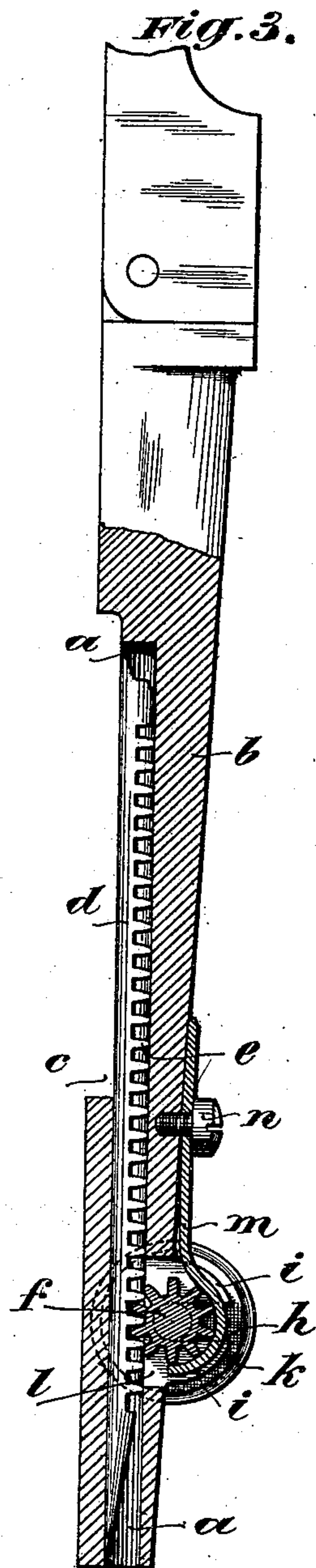
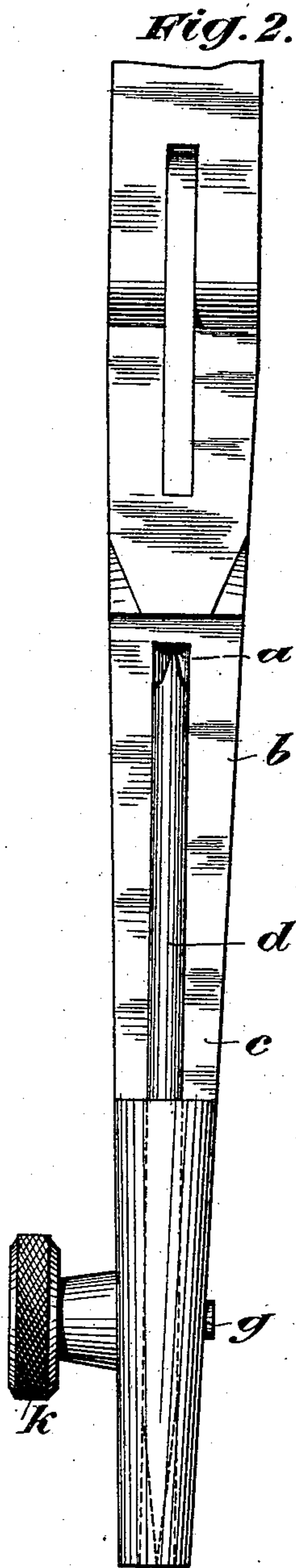
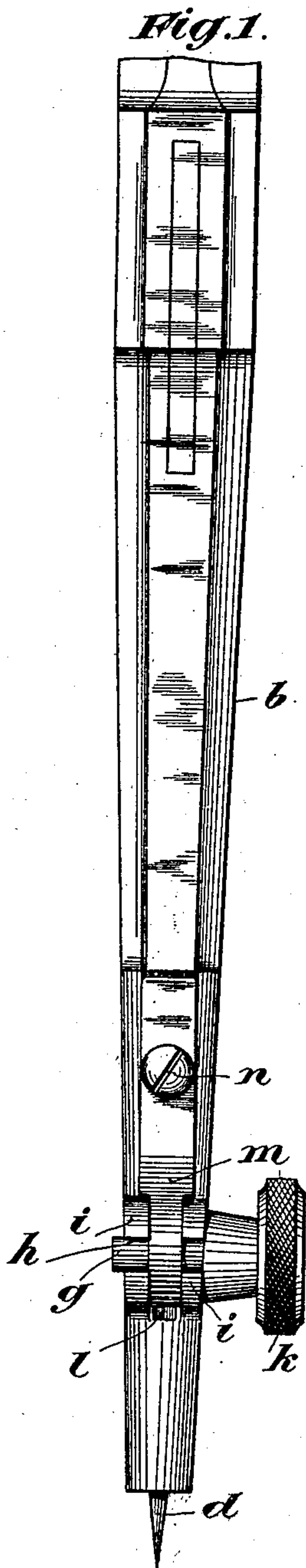
Patented Sept. 30, 1902.

J. BOSSART-BÄCHLI.

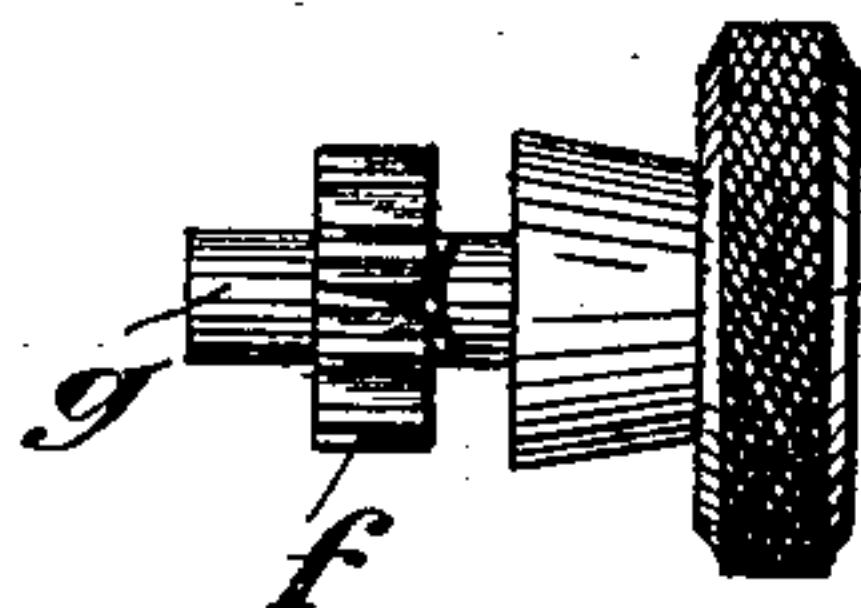
NEEDLE COMPASSES.

(Application filed Mar. 12, 1902.)

(No Model.)



*Fig. 4.*



*Witnesses:*  
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# UNITED STATES PATENT OFFICE.

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## NEEDLE-COMPASSES.

SPECIFICATION forming part of Letters Patent No. 710,242, dated September 30, 1902.

Application filed March 12, 1902. Serial No. 97,943. (No model.)

*To all whom it may concern:*

Be it known that I, JOHANN BOSSART-BÄCHLI, a citizen of the Republic of Switzerland, residing at Suhr, near Aarau, Switzerland, have invented new and useful Improvements in Needle-Compasses, of which the following is a specification.

The object of the present invention relates to improvements in needle-compasses.

These improvements consist, essentially, in the fact that the needle is provided with a rack, into which a toothed wheel catches for the purpose of moving the needle in its longitudinal direction by turning the toothed wheel, and thus rendering possible a rapid and sure adjustment, as also in order to protect the points of the needle when the compasses are not in use by moving the needle back to within the bore for the needle in the leg of the compasses.

A further improvement consists in the fact that the points of the needle are situated eccentrically to the axis of the needle for the purpose of executing very small circles.

The accompanying drawings represent a sample form of execution of the object of the invention.

Figure 1 represents the leg of a pair of compasses as seen from above. Fig. 2 shows the leg turned to one hundred and eighty degrees. Fig. 3 is a longitudinal section through the leg, and Fig. 4 a detail.

In a needle-boring *a* in the compass-leg *b*, partially open at *c*, is incased a needle *d*, provided with two points. The needle has a rack *e*, into which a toothed wheel *f* catches, the axle *g* of which has its bearing in the saddle-shaped incisions *h* of two flaps or projections fixed on the two sides of the toothed wheel on the compass-leg and is also provided with a corrugated handle *k* for the purpose of turning the toothed wheel. The wheel penetrates into a slit *l* in the compass-leg, while above the portion of the toothing projecting from the leg a spring *m* is attached, fastened to the leg by means of a small screw *n*. The spring *m* is for the purpose of fixing and acting as a brake on the toothed wheel *f* in order to prevent an unintentional turning of the wheel. The brake action of the spring

*m* on the wheel *f* can be altered by tightening the screw *n*.

The improvements allow of a rapid and sure adjustment of the point of the needle with relation to the pencil or pen point or to the other needle-point, as the case may be. By the eccentric position of the needle-points to the needle center it is possible to describe very small circles, since the points of the two legs can be brought into close proximity. The needle-points can be quickly interchanged, and the brake action of the spring prevents any unintended movement of the points with relation to the pencil or pen point. The brake action also prevents the loss of the needle, for it can be thrust for its protection into the needle-boring when the compasses are not in use.

Having thus fully described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is—

1. A compass-leg, a suitably-guided point therein, a rack on the point, a pinion engaging the rack, and a spring to frictionally hold the pinion, substantially as described.

2. A compass-leg, a suitably-guided point mounted therein, a rack on the point, a pinion engaging the rack and a spring bearing on and partly encompassing the pinion, for the purpose set forth.

3. A compass-leg, a suitably-guided point mounted therein, a rack on the point, a pinion engaging the rack and a spring secured to the compass-leg to bear on the pinion to frictionally hold it, and means to regulate the friction on the pinion, for the purpose specified.

4. A compass-leg, a suitably-guided point mounted therein, a rack on the point, a pinion engaging the rack, and a spring having a curved end to bear on the pinion, and a screw to secure said spring to the leg and to regulate the amount of friction on the pinion, for the purpose specified.

5. A longitudinally-bored compass-leg, a needle mounted in said bore, a rack formed on the needle, a pinion adapted to engage the rack and a spring to frictionally hold the pinion in engagement with the rack, and means

for regulating the amount of friction, for the purpose specified.

6. A longitudinally-bored compass-leg, a reversible needle adapted to be drawn entirely within the bore and having its points eccentric to the axis thereof, said points when within the bore adapted to contact with the wall thereof, a rack on the needle, slotted lugs mounted on both sides of a slot formed in one wall of the bore, a toothed wheel mount-

ed in the slots of said lugs and in engagement with the rack, and a spring adapted to bear on the wheel, for the purpose specified.

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

JOHANN BOSSART-BÄCHLI.

Witnesses:

MORITZ VEITH,  
A. LIEBERKNECHT.