No. 755,396. PATENTED MAR. 22, 1904.

G. SCHOENNER.

COMPASSES.

APPLICATION FILED NOV. 7, 1903.

NO MODEL.

Fig. I.

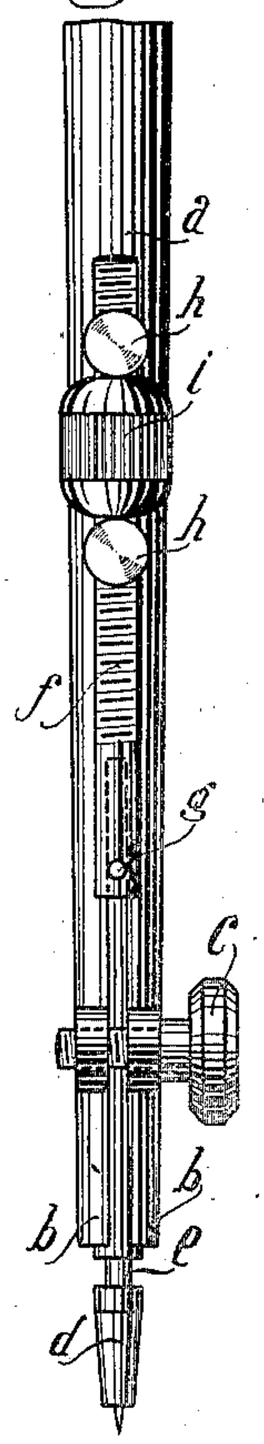


Fig. II.

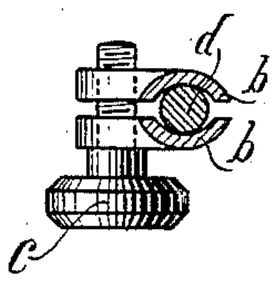


Fig. III.

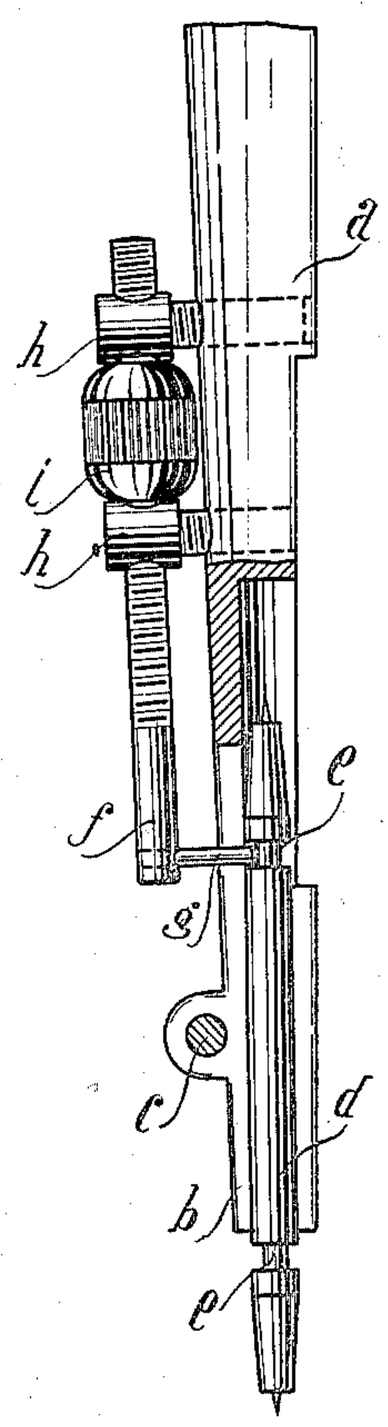


Fig. IV.

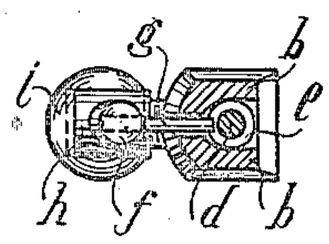
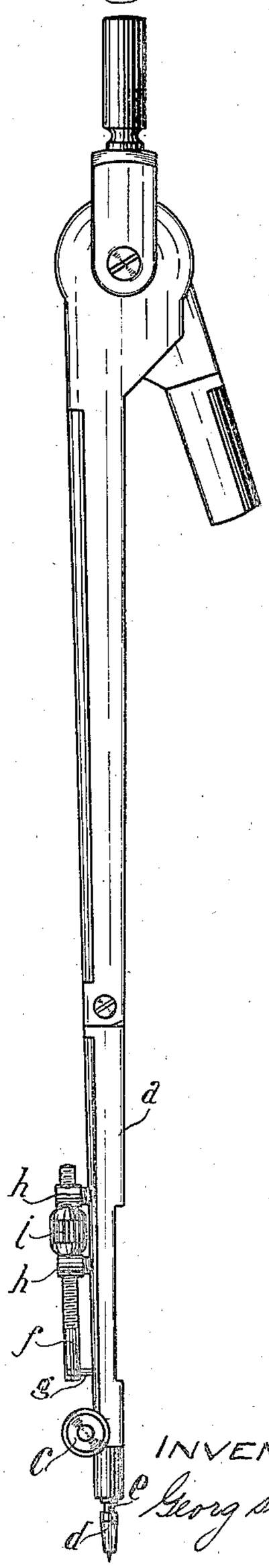


Fig. I.



WITNESSES

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No. 755,396. Patented March 22, 1904.

UNITED STATES PATENT OFFICE.

GEORG SCHOENNER, OF NUREMBERG, GERMANY.

COMPASSES.

SPECIFICATION forming part of Letters Patent No. 755,396, dated March 22, 1904.

Application filed November 7, 1903. Serial No. 180,257. (No model.)

To all whom it may concern:

Be it known that I, GEORG SCHOENNER, manufacturer, a subject of the Emperor of Germany, and a resident of Nuremberg, in the Empire of Germany, (whose post-office address is 7 Gartenstrasse, Nuremberg aforesaid,) have invented certain new and useful Improvements in Compasses, of which the following is a specification.

The present invention relates to compasses provided with inserted pins in which the pin is clamped firmly in a smooth guide or holder and in this manner adjusted to a suitable length and also secured against lateral movements.

The improvement introduced therein has for its object to allow of the fine adjustment of the pin by turning a nut, arranged at the side of the compass-leg and which is therefore easily-handled. This advantage is obtained by the insertion-pin being connected with a spindle guided parallel to the needle at the side of the compass-leg, which spindle carries the pin with it. On the upper threaded part of this spindle a nut is mounted and prevented from being displaced longitudinally. A pair of compasses provided with this improved fine adjusting arrangement for the pin is shown in Figures 1 to 5 of the accompanying drawings.

In the drawings, Fig. 1 is an elevation of the lower portion of one leg; Fig. 2, a cross-section taken in proximity to set-screw *c*. Fig. 3 is a view similar to Fig. 1, but with the leg a quarter turned. Fig. 4 is a cross-section in proximity to the pin *g*, and Fig. 5 is a view of the entire compasses except that the other leg is broken away.

The lower end of the leg *a* is divided into two grooved spring parts *b* by means of a longitudinal perforation and a longitudinal slot, the said two parts *b* being held together by a set-screw *c* and gripping between them the pin *d*. The latter has a groove *e* either at its upper end alone or, in case it is provided with two points, as shown in the accompanying drawings, at both ends. A spindle *f* is mounted on the side of the leg *a* parallel to the pin, but not on the same axis, which spindle carries at its lower end a catch-pin *g*, directed toward the middle of the compasses. This pin projects through the longitudinal slot of the lower leg of the compasses and engages in the groove or grooves *e* of the pin, so that when longitudinally displaced the spindle *f* carries the pin along with it, while after the clamp-screw *c* is loosened the pin may be suitably turned. The catch-pin *g*, sliding in the longitudinal slot of the leg *a*, also serves for preventing the spindle *f* rotating. The upper part of the spindle is threaded and passed through two guide-pieces arranged closely one above the other. The heads of two screws *h*, which heads are provided with cross-perforations, may be employed as such guide-pieces. Between these screws *h* a stud *i*, formed as a nut, is arranged, which is adapted to be rotated on the thread of the spindle *f* and is milled on its periphery or otherwise treated to enable it to be easily held. Any longitudinal displacement is prevented by the screws *h*, against which the stud *i* directly bears. On turning the stud a longitudinal displacement of the spindle *f*, which is prevented rotating, takes place. The pin *d*, carried along by the pin *g*, shares in this movement, so that a suitable and exact fine adjustment of the pin *d* in the direction of its height is possible. After the adjustment has taken place the pin may be secured in its then position against any unintentional longitudinal displacement and also against lateral movement by screwing tight the set-screw *c*.

I declare that what I claim is—

1. In a pair of compasses the combination with one of the legs thereof, of a pin slidingly carried thereby, and independent screw-operated means carried by said leg for sliding said pin substantially as described.

2. The combination with one of the legs of a pair of compasses, of a pin slidingly carried thereby, a threaded spindle mounted to slide lengthwise of said leg and having an operative connection with the pin, and a nut on

said spindle with means for preventing movement of the same longitudinally of the leg substantially as described.

3. The combination with one of the legs of a pair of compasses of a pin mounted to slide in a guide in said leg, a threaded spindle slidingly supported at the side of the leg, a pin projecting from said spindle and engaging the pin, a nut on said thread and stops on each side of said nut for preventing movement of the same longitudinally of the leg substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

GEORG SCHOENNER.

Witnesses:

LEONHARD KOERBER,

HERMANN DÖHLEMANN.