No. 723,041. PATENTED MAR. 17, 1903.

W. SCHWARZER.

COMPASSES.

APPLICATION FILED MAR. 13, 1901.

NO MODEL.

Fig. I

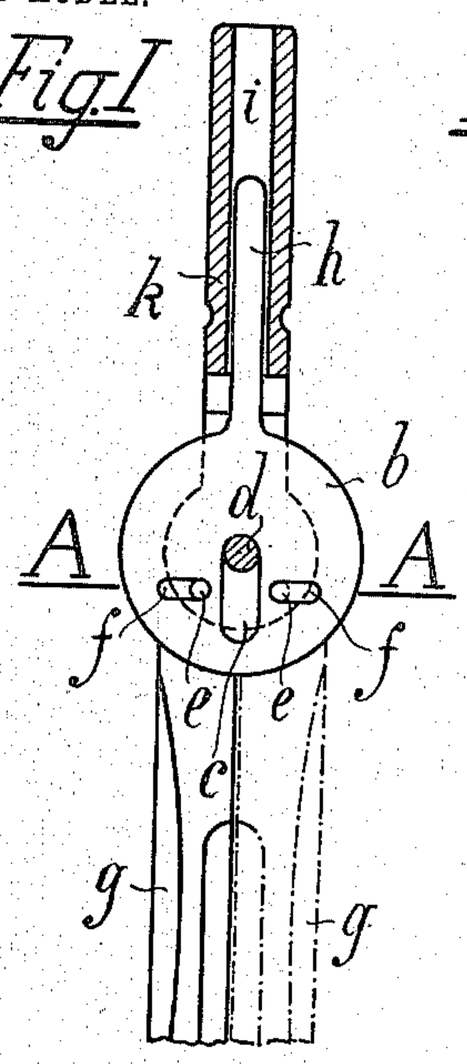


Fig. II

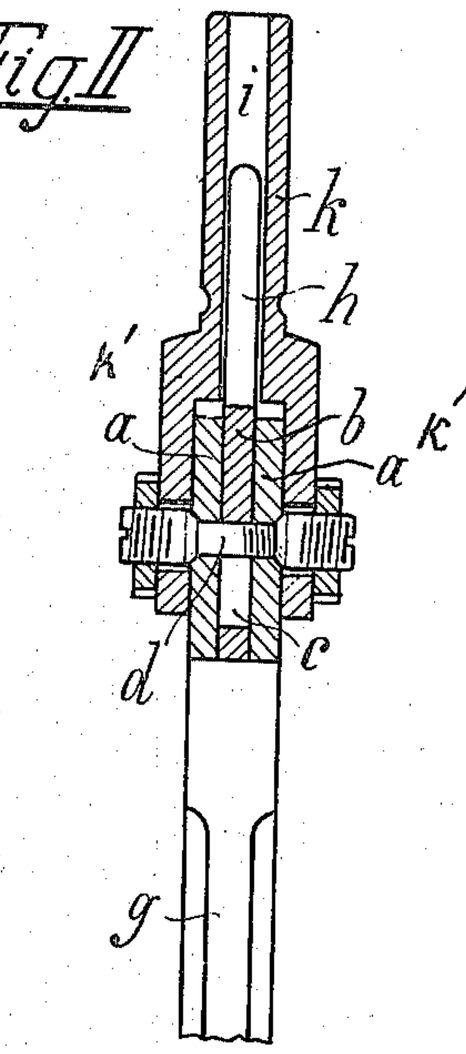


Fig. III

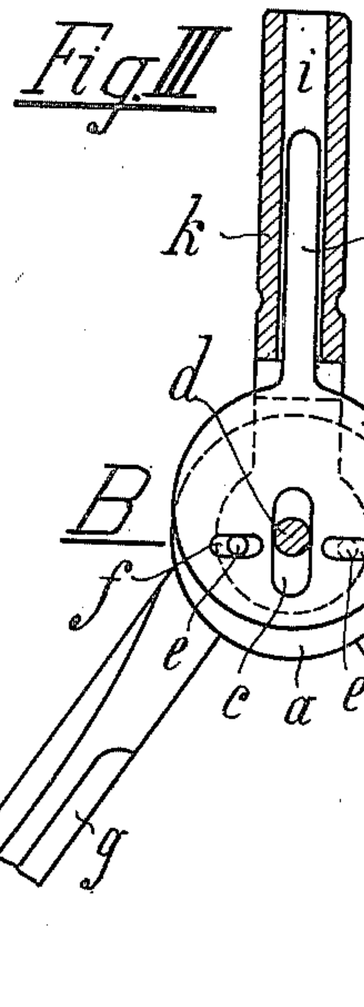


Fig. III

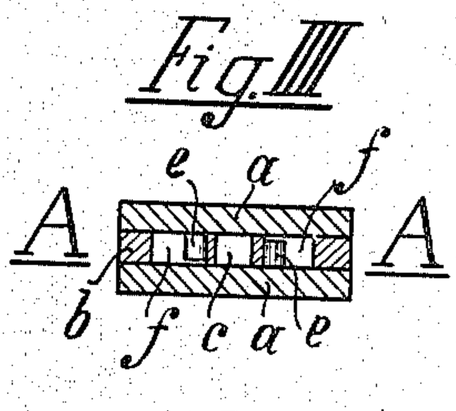


Fig. V

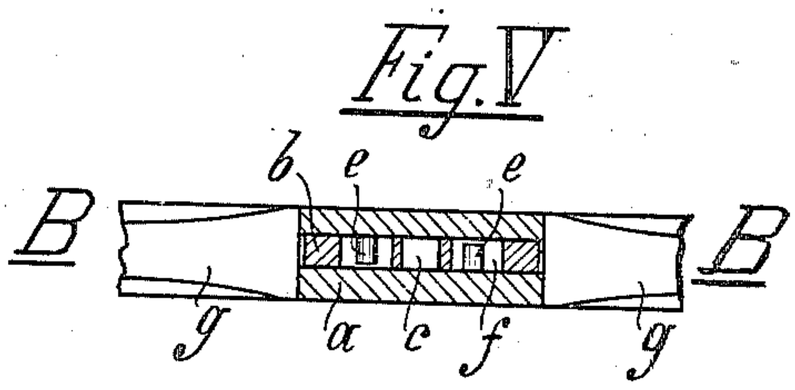


Fig. VI

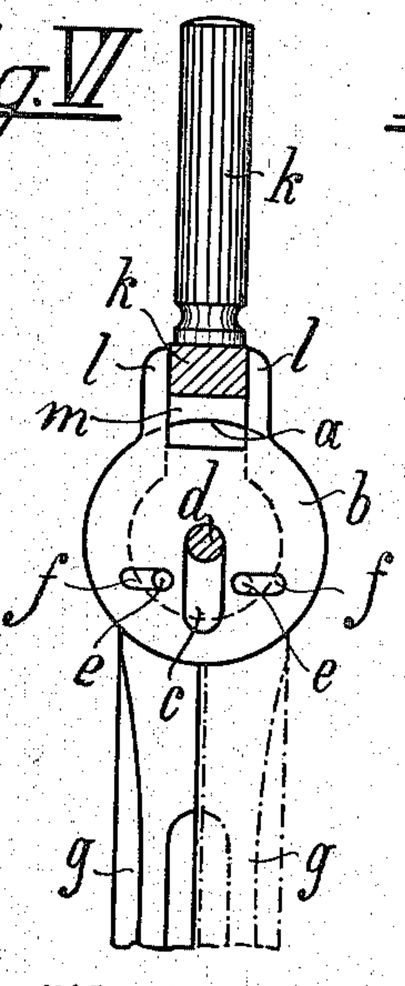


Fig. VII

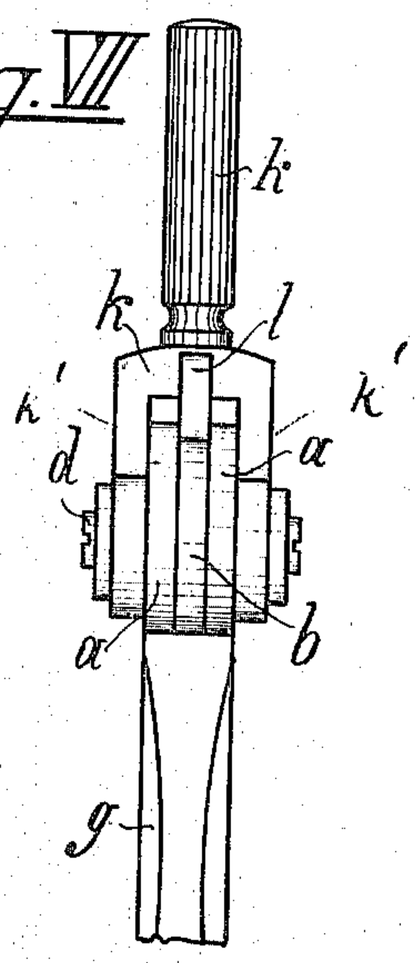
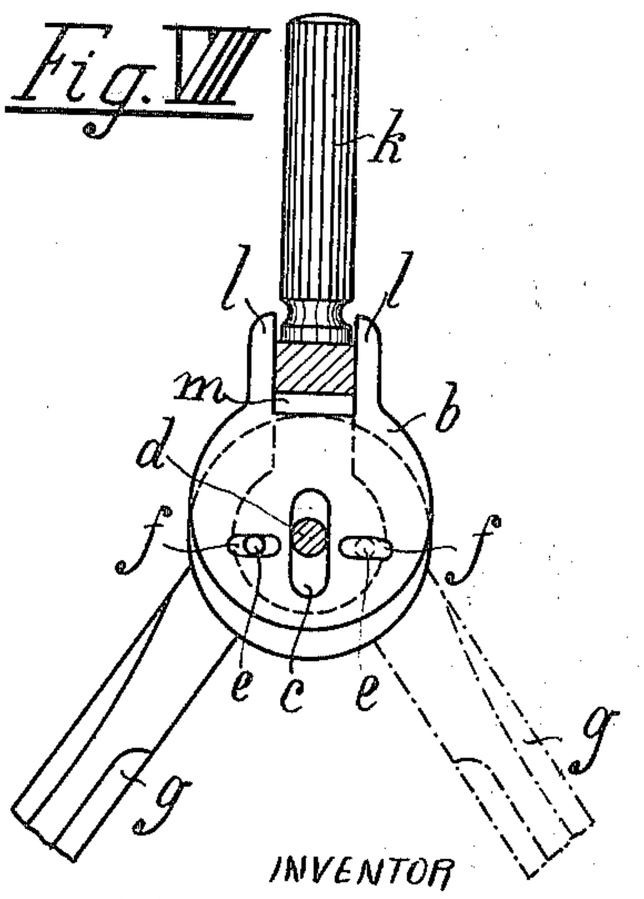


Fig. VIII



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILHELM SCHWARZER, OF NUREMBERG, GERMANY, ASSIGNOR TO GEORG SCHOENNER, OF NUREMBERG, GERMANY.

COMPASS.

SPECIFICATION forming part of Letters Patent No. 723,041, dated March 17, 1903.

Application filed March 13, 1901. Serial No. 50,986. (No model.)

To all whom it may concern:

Be it known that I, WILHELM SCHWARZER, a subject of the German Emperor, and a resident of Nuremberg, Bavaria, Germany, have invented new and useful Improvements in Compasses, of which the following is a full, clear, and exact description.

The present invention relates to compasses; and it consists of means for retaining the handle at the top of the compass always perpendicular to—*i. e.*, coincident with—a line bisecting the angle at which the legs of the compass stand.

In order to render the present specification easily intelligible, reference is had to the accompanying drawings, in which similar letters of reference denote similar parts throughout the several views.

Figure 1 is a sectional elevation; Fig. 2, a vertical cross-sectional elevation along the center line of the compass. Fig. 3 is a sectional elevation with the legs spread; Fig. 4, a cross-section on line A A of Fig. 1, and Fig. 5 a similar section on line B B of Fig. 3. Figs. 6 to 8 show a modified form embodying the invention, Fig. 6 being a sectional elevation showing one leg of the compass removed from the pivot and the front leg of the handle-supporting bow cut away. Fig. 7 is a side elevation; and Fig. 8 a similar sectional elevation to that of Fig. 6, but with the legs spread.

The legs *g g* of the compass are fitted to their pivot *d* by means of the disks *a a* in the well-known manner, and between the disks *a a* a movable disk *b* is mounted. The pivot *d* has its ends supported by threaded connections with the arms *k' k'* of the yoke forming part of the handle *k*. This disk *b* has a vertical slot *c*, which may move over the pivot *d*, and at either side of the said slot horizontal slots *f f*. The pivot *d* is provided at one end with a head and on the other with a screw-thread, on which a nut is screwed. The inner ends of the head and nut are of conical form and are laid into corresponding conical depressions in the shank-head joint-hinges *a*. The head and the nut of the pivot *d* are provided with threads on their circumference which have a pitch opposite that of the pivot *d*. The head and the nut of the pivot *d* project loosely through the opening in the handle *k* and carry disks on their circumference which lie against the outer surfaces of the handle and serve the purpose of holding the pivot *d* rigidly within the bow-head and to regulate its position within the latter. The conical inner ends of the head and nut of the pivots *d* are of course not provided with threads, but have a perfectly smooth circumference in order to fit into the conical depressions in the shank-head joints. Both disks *a a* are provided on their inner faces with pins *e e*, adapted to engage in the slots *f f*. Thus the pin of one disk *a* engages the horizontal slot *f* at one side of the vertical slot, while the pin of the other leg-disk engages the opposite slot of the said disk *b*.

From the above description it will be clear that when the legs of the compass are spread apart, as illustrated in Fig. 3, the pins *e e* will move in the slots *f f* and will raise the disk *b*, but will prevent the same from turning, always keeping it in the same position relative to the line bisecting the angle formed by the two legs. The handle *k* of the compass is provided with a vertical boring *i*, and the disk is provided with an upwardly-extending arm *h*, which is in a line with the center line of the angle formed by the legs of the compass, and thus the handle *k* will be retained always in line with the line bisecting the angle formed by the said compass-legs, as will be readily understood.

For the stronger class of compasses the device as modified according to Figs. 6 to 8 is advantageously employed in order to obviate the possibility of the guide-arm *h* breaking off. In this case the said disk *b* is provided with upwardly-extending guide-arms *l l*, which embrace the top of the bow of the handle *k* instead of one guide-arm extending into a boring of the said handle. The device is otherwise the same as that described with reference to Figs. 1 to 5 and needs no further elucidation.

I claim as my invention—

In a compass, the combination of a disk mounted between the leg-disks on the pivot of the compass, a vertical slot in said disk to permit the movement of the same on the compass-pivot, a horizontal slot at each side of

the vertical slot, an inwardly-extending pin fixed on each of the compass-leg disks one pin extending into each slot and guide-arms on the said disk to embrace the upper part of the bow of the compass and enable the disk to slide relatively to the same substantially as described.

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

WILHELM SCHWARZER.

Witnesses:
OSCAR BOCK,
ANDREAS STICH.