No. 723,720. PATENTED MAR. 24, 1903.

E. M. OSTLUND.

COMPASSES.

APPLICATION FILED SEPT. 11, 1902.

NO MODEL.

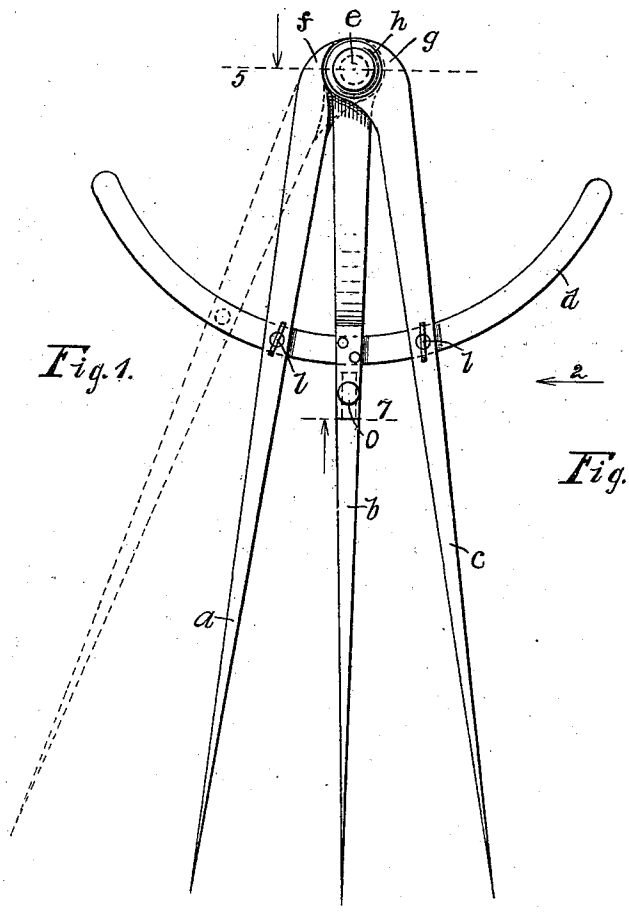


Fig. 1.

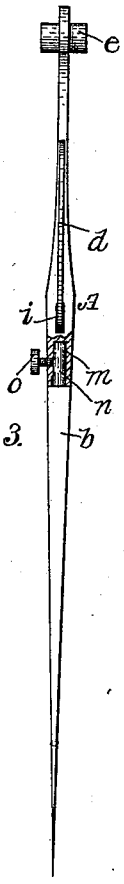


Fig. 3.

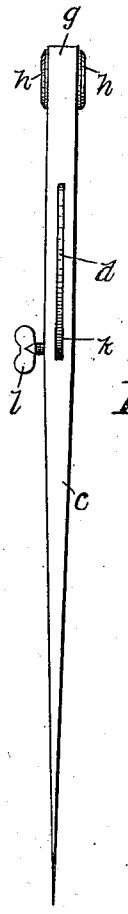


Fig. 2.

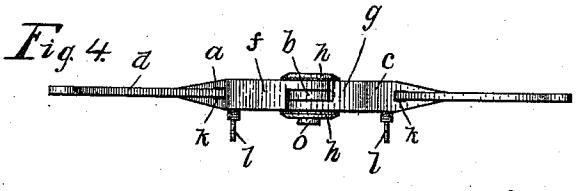


Fig. 4.

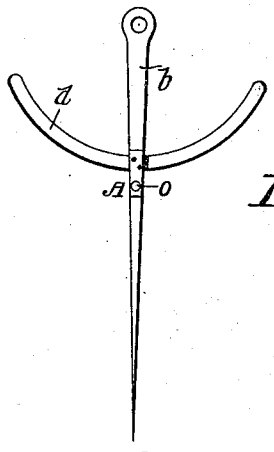


Fig. 6.

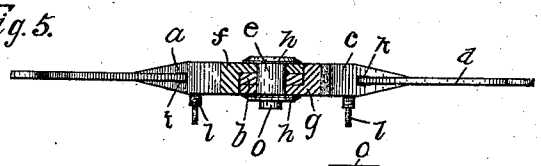


Fig. 5.

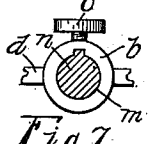


Fig. 7.

Witnesses

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UNITED STATES PATENT OFFICE.

ERIC M. OSTLUND, OF ROCHESTER, NEW YORK.

COMPASSES.

SPECIFICATION forming part of Letters Patent No. 723,720, dated March 24, 1903.

Application filed September 11, 1902. Serial No. 123,004. (No model.)

To all whom it may concern:

Be it known that I, ERIC M. OSTLUND, of Rochester, in the county of Monroe and State of New York, have invented a new and useful Improvement in Compasses, which improvement is fully set forth in the following specification and shown in the accompanying drawings.

My invention belongs to a class of mechanics' instruments commonly known as "compasses" or "dividers," used for taking, measuring, or subdividing short distances or for striking circles or arcs of circles.

This improved instrument is formed with three legs equal in length, the pointed free ends of which being in a plane. The intermediate or middle leg of the device constitutes an integral part of the frame of the instrument, carrying the two extreme or outside legs adapted to turn or swing on pivotal bearings on the frame independent of the intermediate leg and of each other.

The main object of the invention is to produce an instrument of the nature of compasses by means of which distances or measurements of different magnitudes may be carried between the points of the two pairs of legs or a given distance may be carried between the points of one pair of legs, while the distance between or measurement by the other pair may be varied as need or use may require.

Other objects and advantages of the invention will be brought out and made to appear in the following specification, reference being had to the accompanying drawings, forming a part thereof, the invention being particularly pointed out in the claims.

Figure 1 is a side elevation of the compasses with one movable leg shown in two positions by full and by dotted lines. Fig. 2 is an edge view seen as indicated by arrow 2 in Fig. 1. Fig. 3 is an edge view of the middle leg and frame detached, seen as indicated by arrow 2 in Fig. 1. Fig. 4 is a view of the device looking down on top of the same. Fig. 5 is a view from above, parts being horizontally sectioned on the dotted line 5 in Fig. 1. Fig. 6, drawn to a reduced scale, is a side elevation of the frame detached. Fig. 7, exaggerated, is a transverse section of the middle leg, taken on the dotted line 7 in Fig. 1.

In the drawings, A, Figs. 3 and 6, is a skeleton structure constituting the frame of the instrument, holding movable legs *a c*. This frame consists of a tapered bar or shaft *b*, having a perforated head at one end and pointed at the other, a short pintle *e* being held rigidly in the head, as shown, the axis of the pintle being at right angles with the axis of the tapered bar *b*. A curved strip *d* passes through a longitudinal opening *i* in the bar *b* and made rigid therein, this strip being in a plane at right angles with the axis of the pin *e* and concentric with the latter, the curved ends of the strip extending equally each way from the bar. The tapered bar *b* corresponds as to size and shape with the legs *a c*, said bar constituting a third or middle leg for the instrument, all three being equal in length. The outer legs *a c* are formed with perforated flattened heads *f g*, which pass, respectively, upon the projecting ends of the pin *e* of the frame, being held to place by tight-fitting washers *h h* on the ends of the pin. These legs are formed with longitudinal openings *k*, Figs. 2, 4, and 5, through which to receive the ends of the curved strip *d*, said strip constituting a guide for the outer legs, along which they freely move as they are turned one way or the other on the pivot-pin *e*. The instrument being thus constructed, the outer legs *a c* are free to move toward or from the middle leg *b* independent of the latter and of each other and alternately act with said middle leg in two pairs—that is to say, the two legs *a* and *b* may act together as a pair in making measurements, &c., and the two legs *b* and *d* may likewise act as a pair, either pair being independent of the other leg in either case. The points of the three legs *a b c* are in the plane of the guide *d*.

Clamp-screws *l* are provided for the movable legs *a c* to temporarily hold these legs in their different positions of adjustment, the points of the screws bearing against the side of the guide. I prefer also to make the middle or skeleton leg *b* in sections, joined as shown, one section being formed with a longitudinal axial socket *m*, Fig. 3, and the other with a reduced stem *n* to fit and fill the socket. This socket and the part *n* are preferably made polygonal in cross-section or otherwise formed so the removable part will al-

ways take and occupy the same relative position in the socket. A clamp-screw *o* of common kind is provided to hold the joined parts of the leg *b* together.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. Compasses consisting of a bar or shaft with head at one end and pointed at the other, a pin in the head of said bar, and a curved guide-strip held to cross the bar, and legs held upon said pin, one on either side of said bar and adapted to move toward or from the latter along the guide-strip, and means for securing the legs in positions of adjustment, substantially as and for the purpose set forth.

2. A frame for compasses, consisting of a headed bar, a pin in the head with its axis at right angles with the axis of the bar, and a curved strip held rigidly in an opening in the bar, the plane of said strip crossing the plane of the pin at right angles, the strip being concentric with the pin and extending equally each way from the bar, the latter being in two sections joined, substantially as shown and described.

3. Compasses consisting of a bar or shaft with head at one end and pointed at the other, a pin in the head of said bar, a guide-strip held by the bar, and legs held movably upon the pin to traverse the guide-strip, and to coact with said bar, the legs being held to move independently of each other and of the bar, substantially as set forth.

4. Compasses consisting of a bar or shaft with head at one end and pointed at the other, a pin in the head of said bar, a guide-strip held by the bar, and pointed legs held movably upon the pin to traverse the guide-strip, the legs and the bar being substantially alike in form and size, said legs and the bar being adapted to act together in pairs, substantially as stated.

In witness whereof I have hereunto set my hand, this 8th day of September, 1902, in the presence of two subscribing witnesses.

ERIC M. OSTLUND.

Witnesses:
ENOS B. WHITMORE,
MINNIE SMITH.