L. HARRIS.

COMPASSES.

APPLICATION FILED OCT. 27, 1908.

935,497. **Patented Sept. 28, 1909.**

Fig. 1.

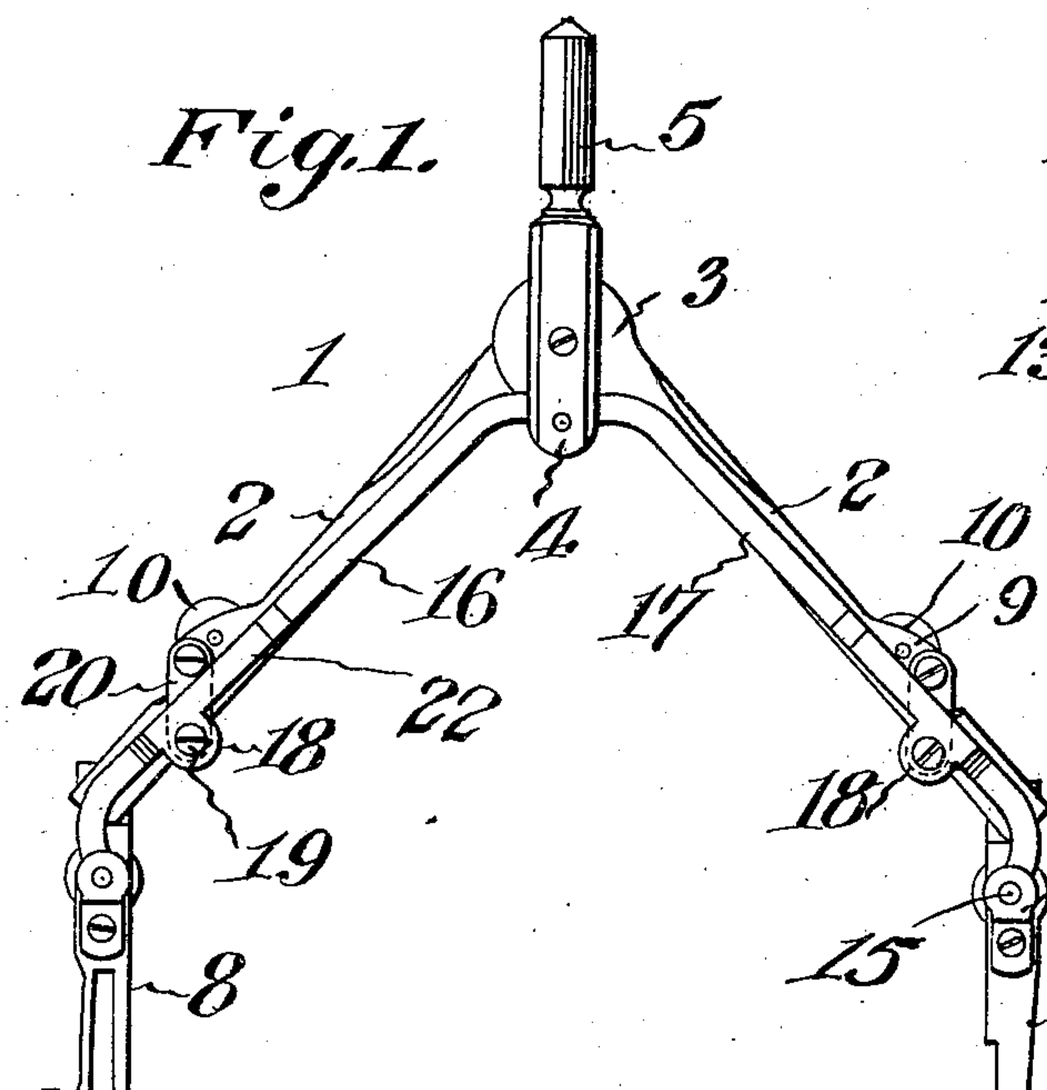

Fig. 4.

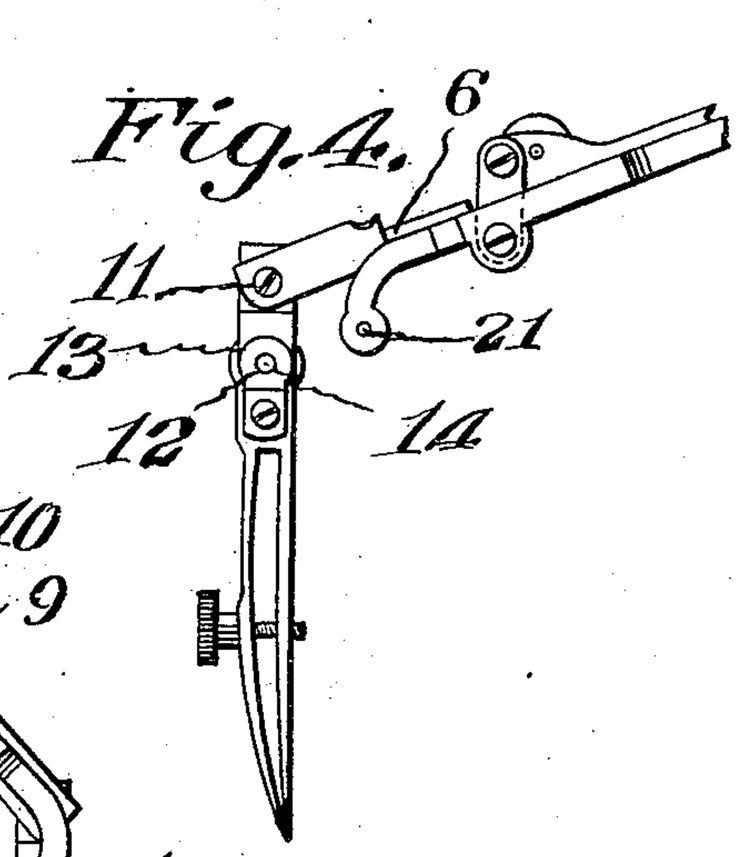

Fig. 2.

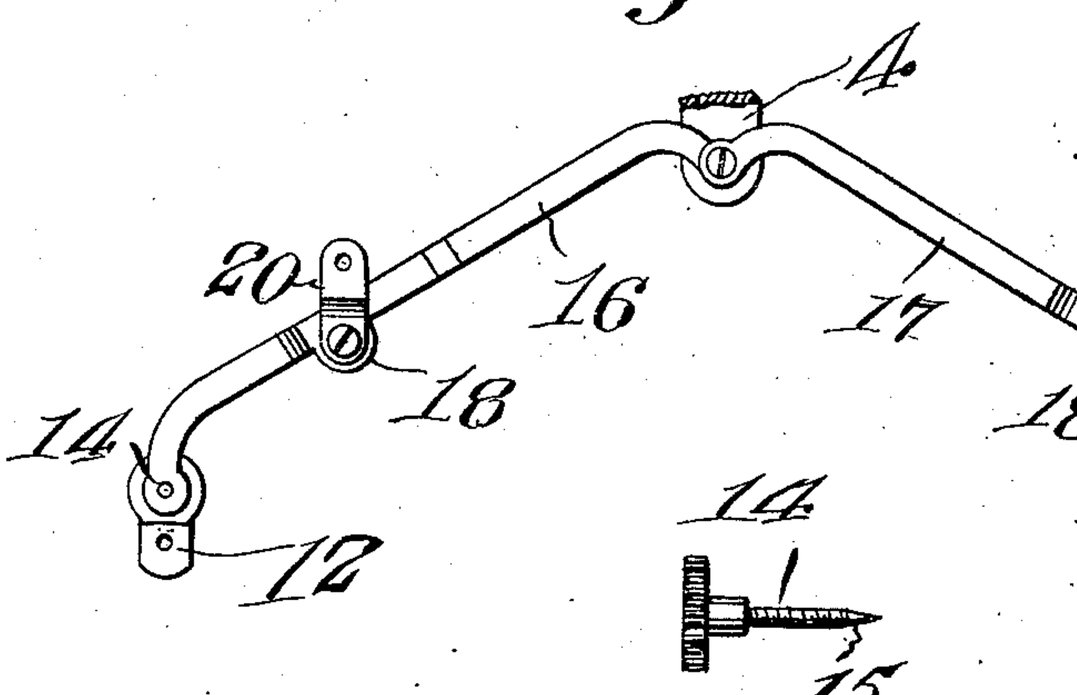

Fig. 3.

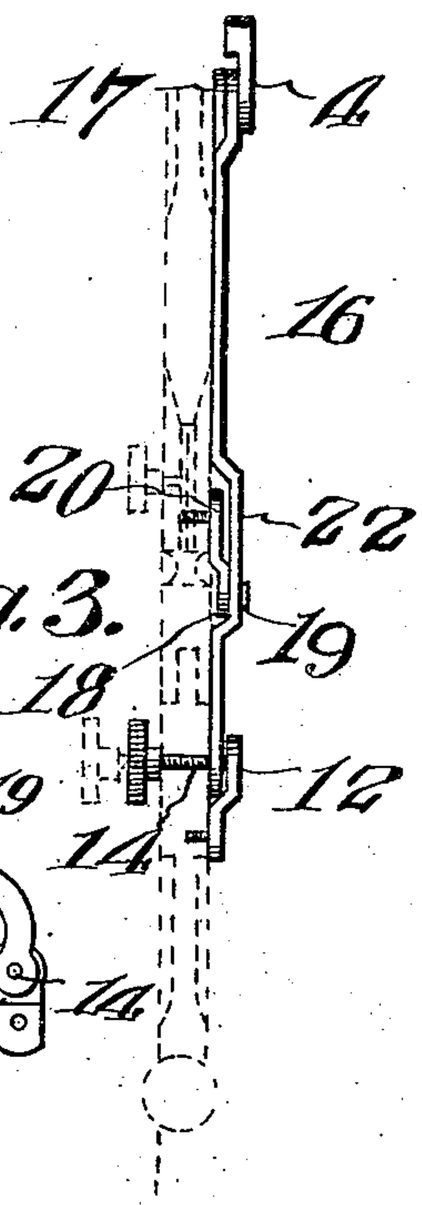

Fig. 5.

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UNITED STATES PATENT OFFICE.

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COMPASSES.

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To all whom it may concern:

Be it known that I, LEE HARRIS, a citizen of the United States, residing at Independence, in the county of Montgomery and State of Kansas, have invented new and useful Improvements in Compasses, of which the following is a specification.

This invention relates to drawing compasses, and the primary object of the invention is to provide a compass of the ordinary construction with devices whereby the point, the marking member and the handle will be retained in a perpendicular relation with the drawing board and paper thereon so that the marking member will at all times be retained in a perpendicular position in regard to the drawing board so as to insure a perfectly smooth lining.

Another object of the invention is to provide a device of this character whereby the point member and marking member of the compass may be adjusted to any desired distance away from each other and still be retained in a perfect parallel position in relation to each other.

A still further object of the invention is to provide an attachment for drawing compasses which will at all times be so positioned upon the compass that it will in no wise interfere with the draftsman operating the compass.

A still further object of the invention is to provide an attachment for compasses whereby the removable point member or marking member may be easily and quickly disconnected from the legs of the compass without interfering with the improved attachment secured upon the compass.

With the above and other objects in view, which will appear as the description progresses, the invention resides in the novel construction and arrangement of parts hereinafter fully described and claimed.

In the accompanying drawing there has been illustrated the preferred embodiment of my invention, but it is to be understood that minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the device.

In the drawing, Figure 1 is a side elevation of an ordinary compass illustrating my improvement in applied position thereon. Fig. 2 is a side elevation of the improvement detached, a portion of the head or handle of the compass being shown in section. Fig. 3 is a side elevation of the invention, the compass being shown in dotted lines. Fig. 4 is a detail side elevation illustrating the lower portion of the improvement detached from the marking member. Fig. 5 is a detail view of the threaded element employed with the present invention.

In the accompanying drawing the numeral 1 designates a drawing compass of the ordinary construction. The compass 1 is provided with the usual legs 2, having their upper portions provided with heads 3 which are pivotally connected between the bifurcated arms 4 provided by the usual handle 5. The legs 2 are provided with the usual openings or channels which are adapted for the reception of the reduced extensions 6 provided upon the detachable point or marking members 7 and 8. The lower extremities of the legs 2 are provided with the usual enlargements 9, adapted for the reception of suitable threaded elements 10 by which the channels provided within the lower portions of the legs are compressed and the removable members retained in position upon the legs. The members 7 and 8 are also of the usual construction, being provided with the ordinary hinged joint 11, but in the present instance these members 7 and 8 are each provided with an offset portion 12 having a rounded head 13 provided with an orifice 14, and adapted for the reception of the point of a threaded element 15 normally carried by the members 7 and 8.

The arms 4 provided by the bifurcated extension of the handle are adapted to extend a suitable distance below the heads 3 of the legs 2 so as to provide a pivoted bearing for a pair of arms 16 and 17. These arms 16 and 17, are precisely alike in construction, and the numerals of reference referring to one of the arms are also applicable to the opposite arm. The arms have their upper extremities rounded, as clearly illustrated in the figures of the drawing and are provided with an offset or projecting portion 18 which is provided with a suitable perforation adapted for the reception of a securing member 19, by which the links 20 are connected with the arms. The free ends of these links 20 are suitably perforated so that they may be pivotally connected with the projections 9 of the legs 2. The lower extending portions of the arms are

rounded as illustrated in the figures of the drawing, and are also provided with suitable openings 21, which, when the arms are positioned upon the removable members 7 and 8 engaged between the offset portions 12 and the side of the removable member and are adapted to be engaged by the threaded element 15. The members 16 and 17 have their body portions provided with suitable offsets 22 whereby the arms may be free to work without interfering with the links 20.

It is to be understood that the distance between the pivotal points of the arms 16 and 17 in regard to their engagement with the bifurcated arms 4 of the handle 5 and their connection with the head 12 is equal to the distance between the pivot point of the head 3 and the pivotal point 11 of the movable members 7 and 8.

From the above description, taken in connection with the accompanying drawing, it will be noted that I have provided a comparatively simple, cheap and durable device for the purpose set forth, one which is easily applicable to an ordinary drawing compass, one wherein the removable members of the compass may be easily disconnected from the legs thereof, one which in no ways interferes with the movement of the draftsman and which at all times retains the point member, marking member and handle of the compass in perfectly parallel relation with each other.

Having thus fully described the invention what is claimed as new is:

1. The combination with a drawing compass having pivoted legs and a handle connecting the said legs, pivoted point and marking members connected with the legs, arms pivotally connected with the handle, links upon the arms pivotally connecting the legs with the arms, and the free ends of the arms pivotally connected with the point member and the marking member.

2. The combination with a compass having pivoted legs, a handle member centrally connected with the legs, hinged marking and point members removably connected with the legs, offset members upon the marking and the point members, arms pivotally connected with the handle, links upon said arms connecting the legs with the arms, and the extremities of the arms pivotally connected with the offset members of the marking member and the point member.

In testimony whereof I affix my signature in presence of two witnesses.

LEE HARRIS.

Witnesses:

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ELZA J. LAMBURT.