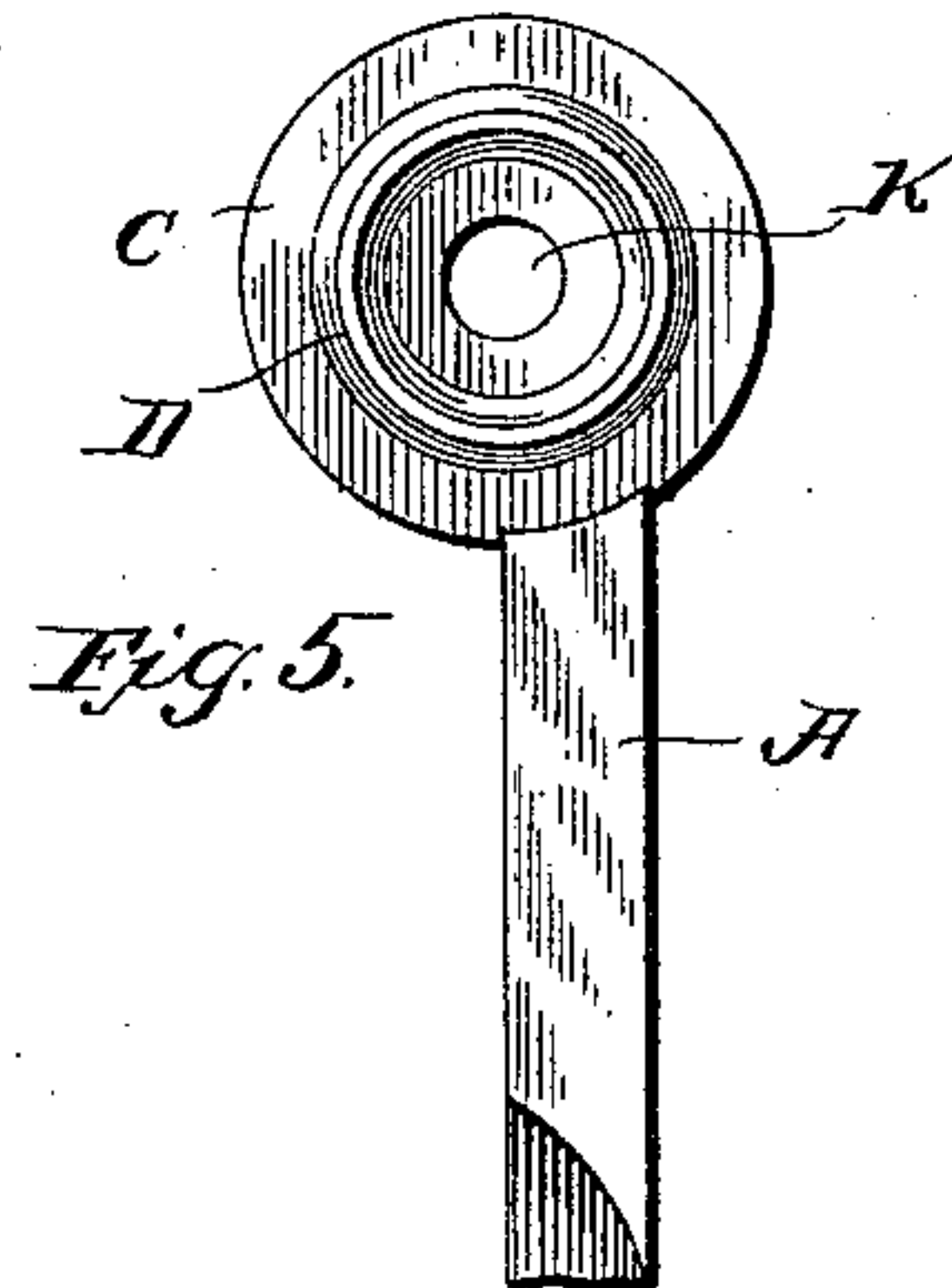
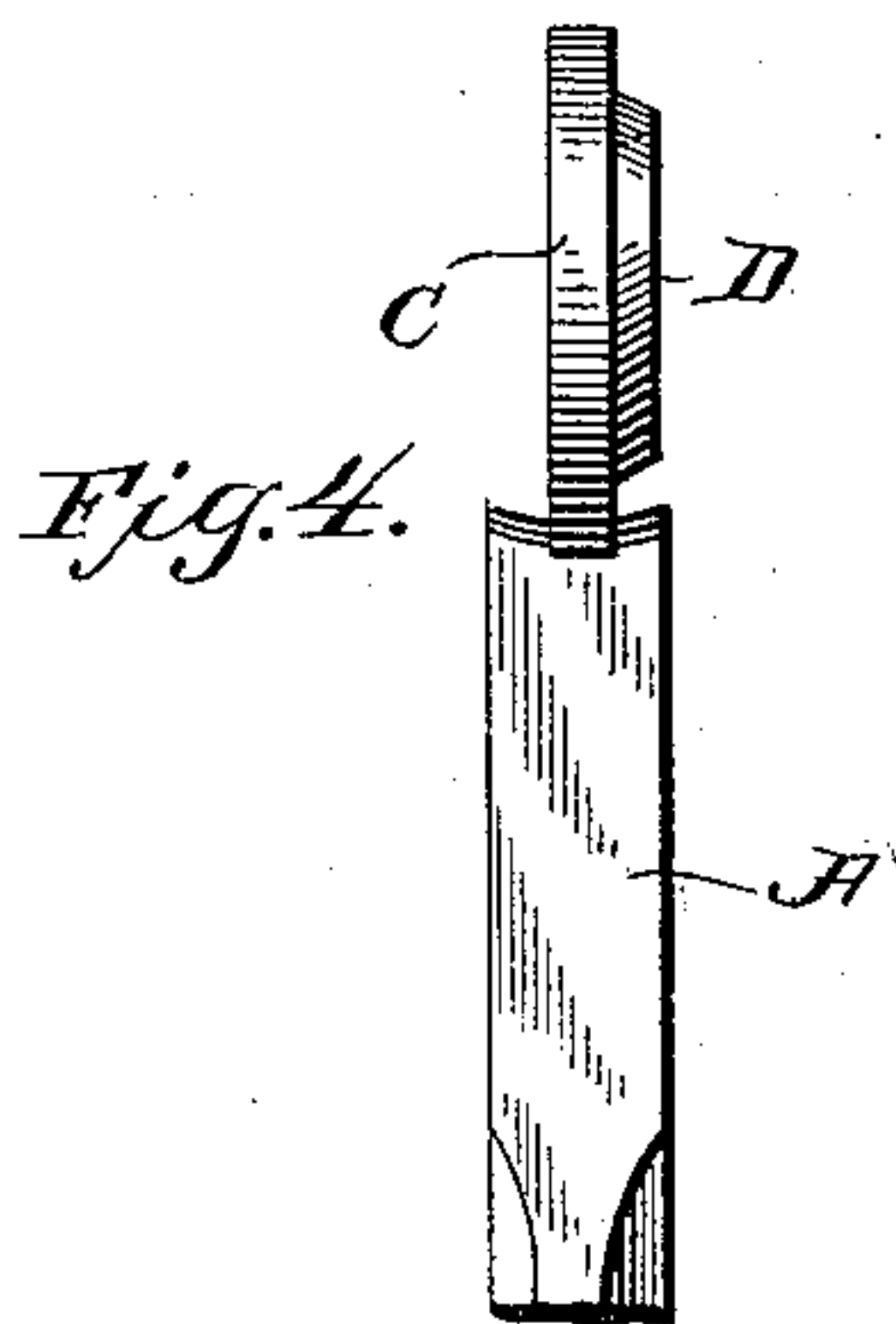
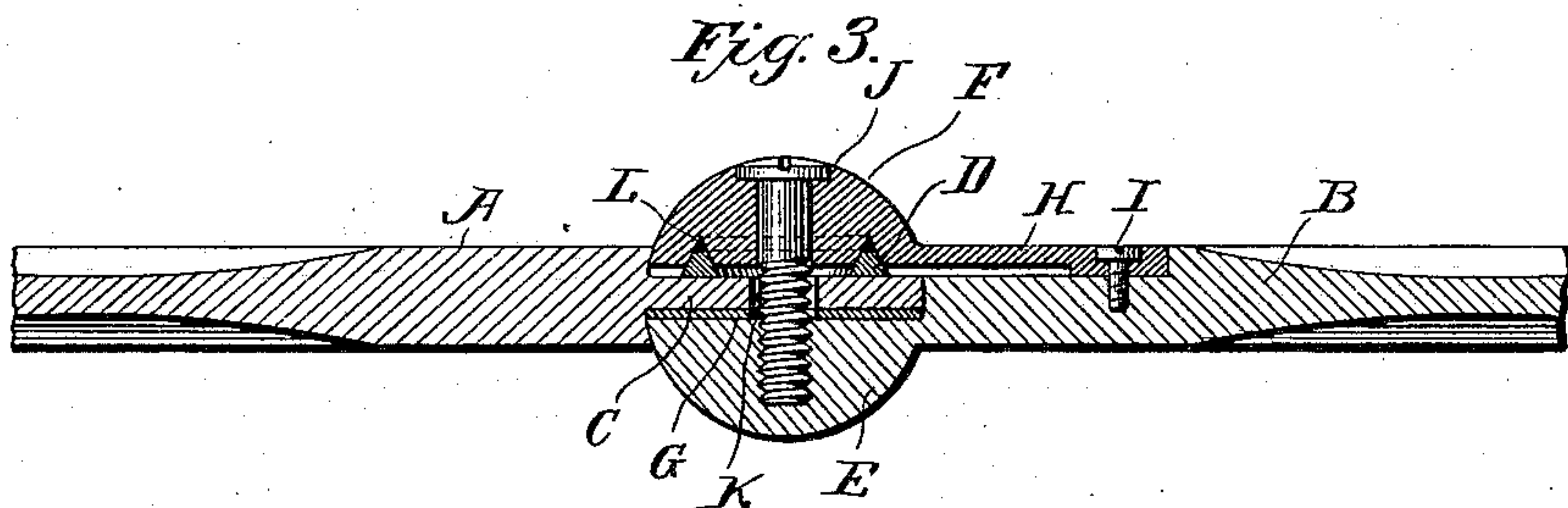
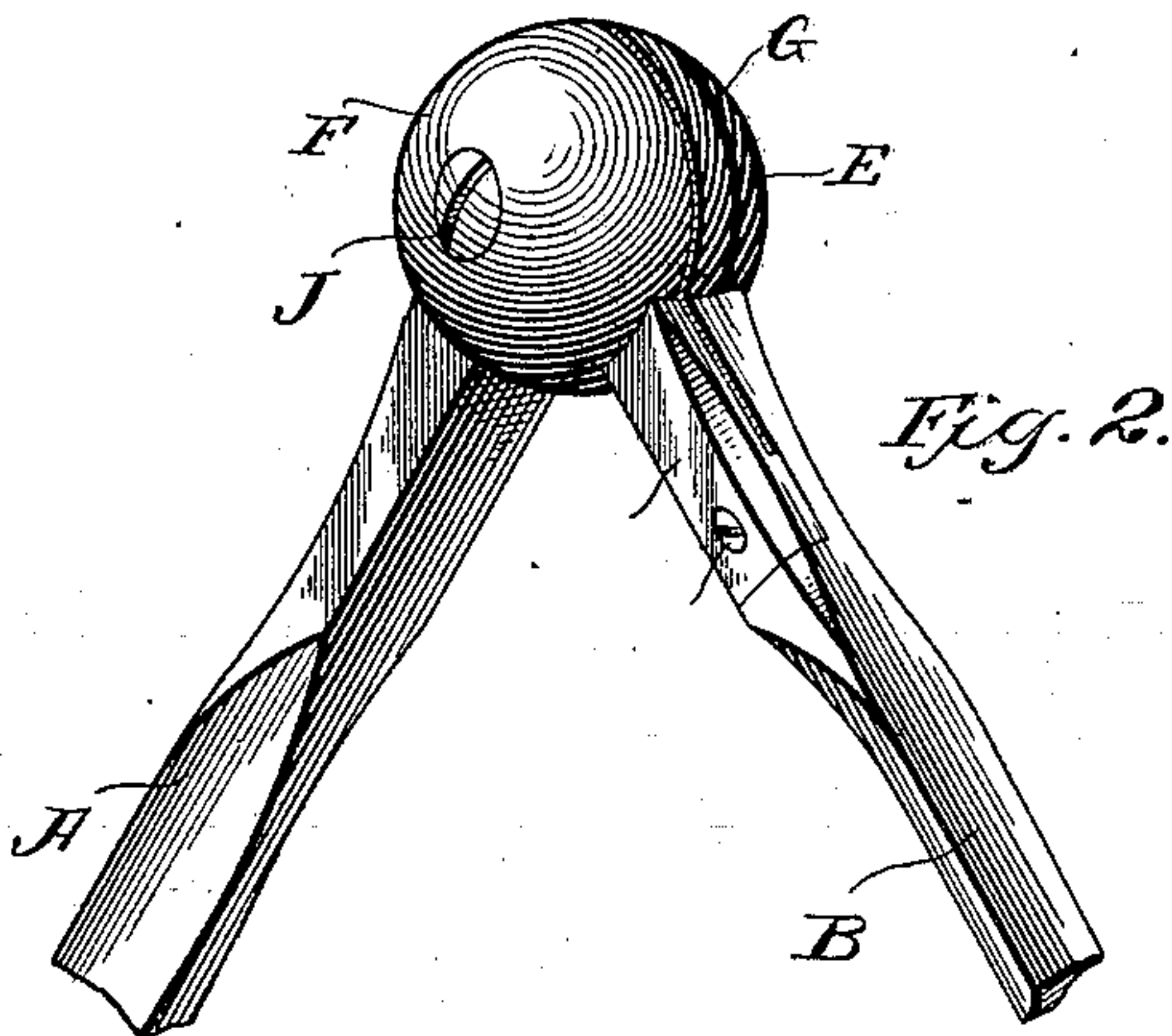
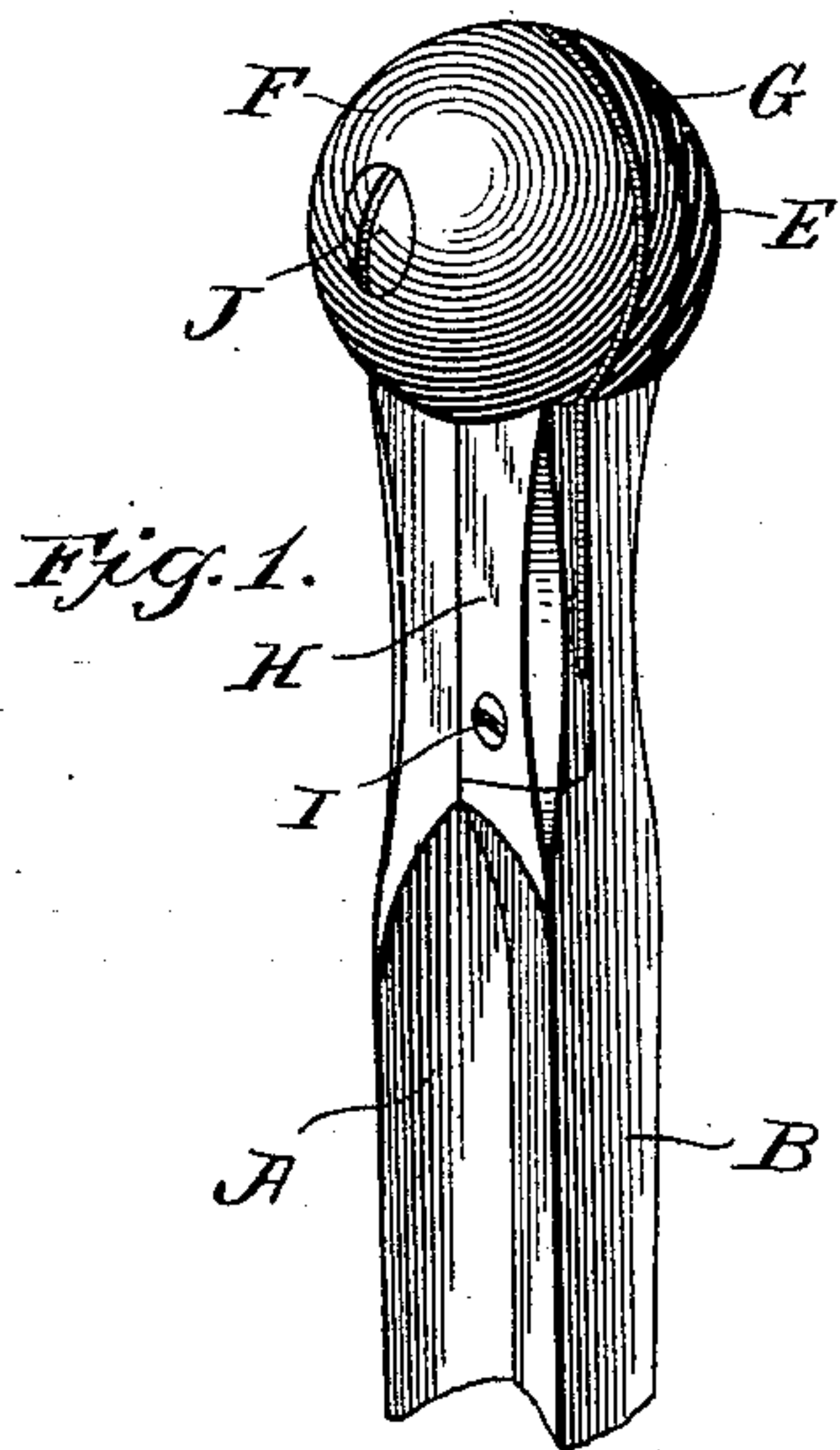


No. 610,354.

Patented Sept. 6, 1898.

F. H. HEATH.  
JOINT FOR COMPASSES, &c.  
(Application filed Sept. 22, 1897.)

(No. Model.)



Witnesses  
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# UNITED STATES PATENT OFFICE.

FREDERICK H. HEATH, OF TACOMA, WASHINGTON.

## JOINT FOR COMPASSES, &c.

SPECIFICATION forming part of Letters Patent No. 610,354, dated September 6, 1898.

Application filed September 22, 1897. Serial No. 652,509. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK H. HEATH, a citizen of the United States, residing at Tacoma, in the county of Pierce and State of Washington, have invented a certain new and useful Improvement in Joints for Compasses and the Like, of which the following is a specification.

My invention relates to a new and useful improvement in joints for compasses, calipers, and the like, and has for its object to provide an exceedingly simple but most durable joint for such devices, by means of which the wear occasioned by the constant use of the joint may be readily compensated for without throwing the two legs or members of the compass or calipers out of true.

With these ends in view this invention consists in the details of construction and combination of elements hereinafter set forth, and then specifically designated by the claim.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, the construction and operation will now be described in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a perspective of the upper portion of a pair of compasses made in accordance with my improvement; Fig. 2, a similar view showing the legs of the compass extended; Fig. 3, a longitudinal section through the joint, illustrating the construction thereof; Fig. 4, a detail edge view of one member of the joint, and Fig. 5 a face view thereof.

In carrying out my invention as here embodied, A and B represent the legs of a compass or similar device, the former of which has a disk C formed therewith or secured thereto, and upon one face of this disk is secured a ring D, which is wedge shape in cross-section, having the vertex thereof cut away for the purpose hereinafter set forth, while the member B has formed therewith a semi-spherical extension E. This extension has a flat inner face, between which and the inner face of the semispherical cap F is confined the disk C; but in practice I prefer that a washer G be interposed between the disk and extension, as clearly shown in Fig. 3, and that this

washer shall be of steel, since it is well known that contact between two different metals produces a better wearing-surface. For this same reason I prefer that the ring D be also of steel or like metal. The cap F has a shank H formed therewith, which is adapted to be secured to the member B by means of the screw I, and when so secured serves to complete this member by filling the space which has been cut away therefor and also by matching the extension E, as will be readily seen, and a screw J is passed through the cap and disk C and threaded into the extension E, so as to hold the members of the joint in position; but the hole through the disk C is of larger diameter than the screw in order that no contact may be had between the two, thus relying entirely upon the ring D fitting snugly within the V-shaped annular groove L to hold the members of the compass in their proper relative position to each other, and it is to be noted that the cap does not come in contact with the face of the disk C, thus leaving the entire pressure to fall upon the ring D, and it is also to be noted that the shank of the cap is reduced in thickness between the screw I and the head thereof, which will give a certain amount of resiliency to this portion of the cap, thereby permitting the cap to be forced inward to compensate for any wear which may take place between the groove and the ring.

From this description it will be seen that the members of the device will always be centered no matter how much wear takes place, and when such wear does take place it may be easily compensated for by the setting up of the screw, which will in no wise interfere with the true action.

My improvement is especially adapted for use in the construction of machinists' instruments of the general description of a compass, since the ring and groove afford a large bearing to sustain the wear between the members, and yet the members will be comparatively free to be moved in adjustment, and all wear which may take place may be compensated for by adjustment.

Another incidental advantage of my improvement is that the completed joint is spherical in shape, rendering it more con-

venient in handling and less likely to slip in the hands of the user.

Having thus fully described my invention, what I claim as new and useful is—

- 5 In a compass, a disk formed at the end of one leg, a ring wedge-shaped in cross-section arranged on one face of said disk, an extension formed on the end of the other leg, and fitting against the other face of said disk, a  
10 cap having an annular groove therein, a shank formed on the cap secured to the leg of the

compass opposite the extension, the ring of the disk fitting in the groove of the cap, a screw threaded through the cap and disk into the extension, as and for the purpose described. 15

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

FREDERICK H. HEATH.

Witnesses:

E. STEINBACH,

EDWARD S. ORR.