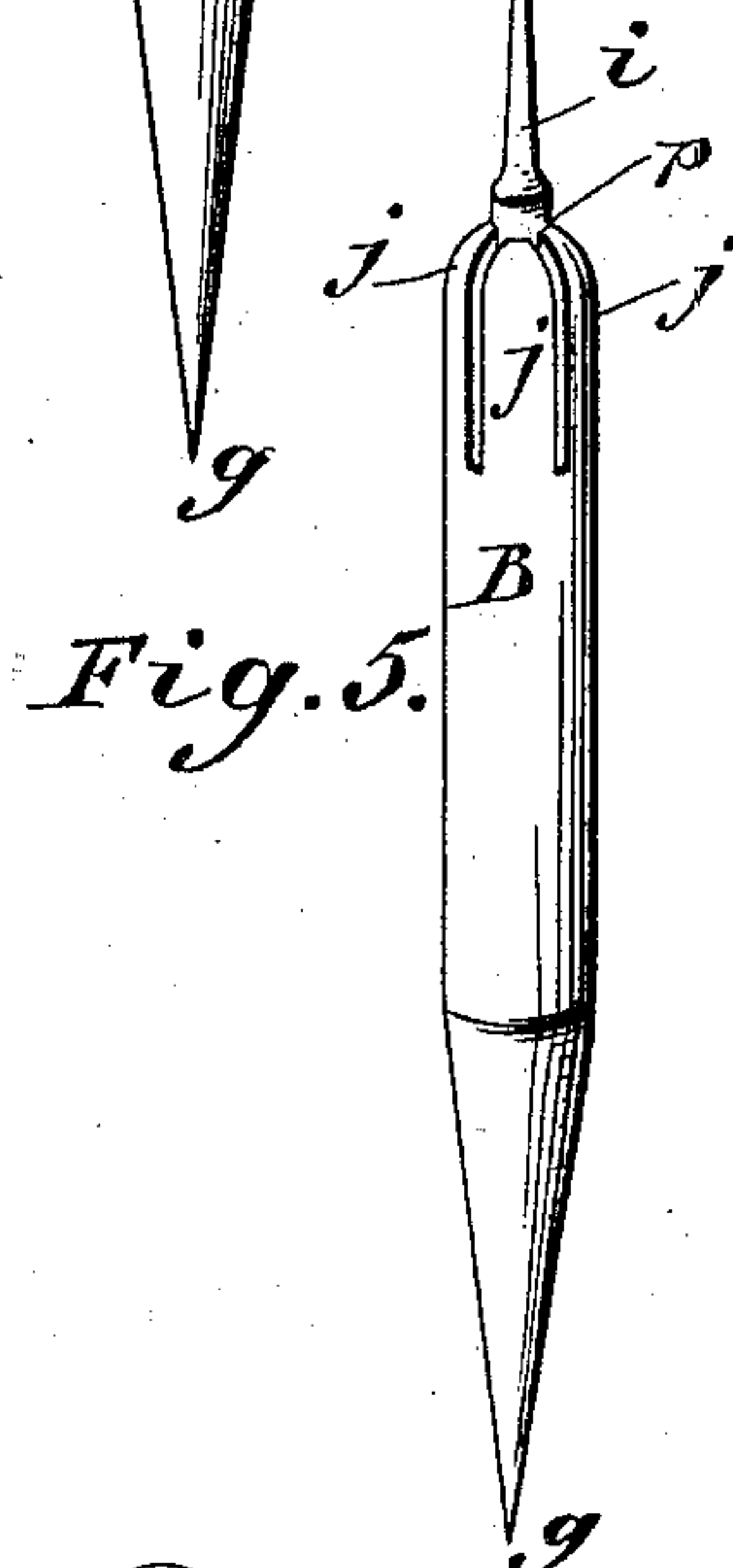
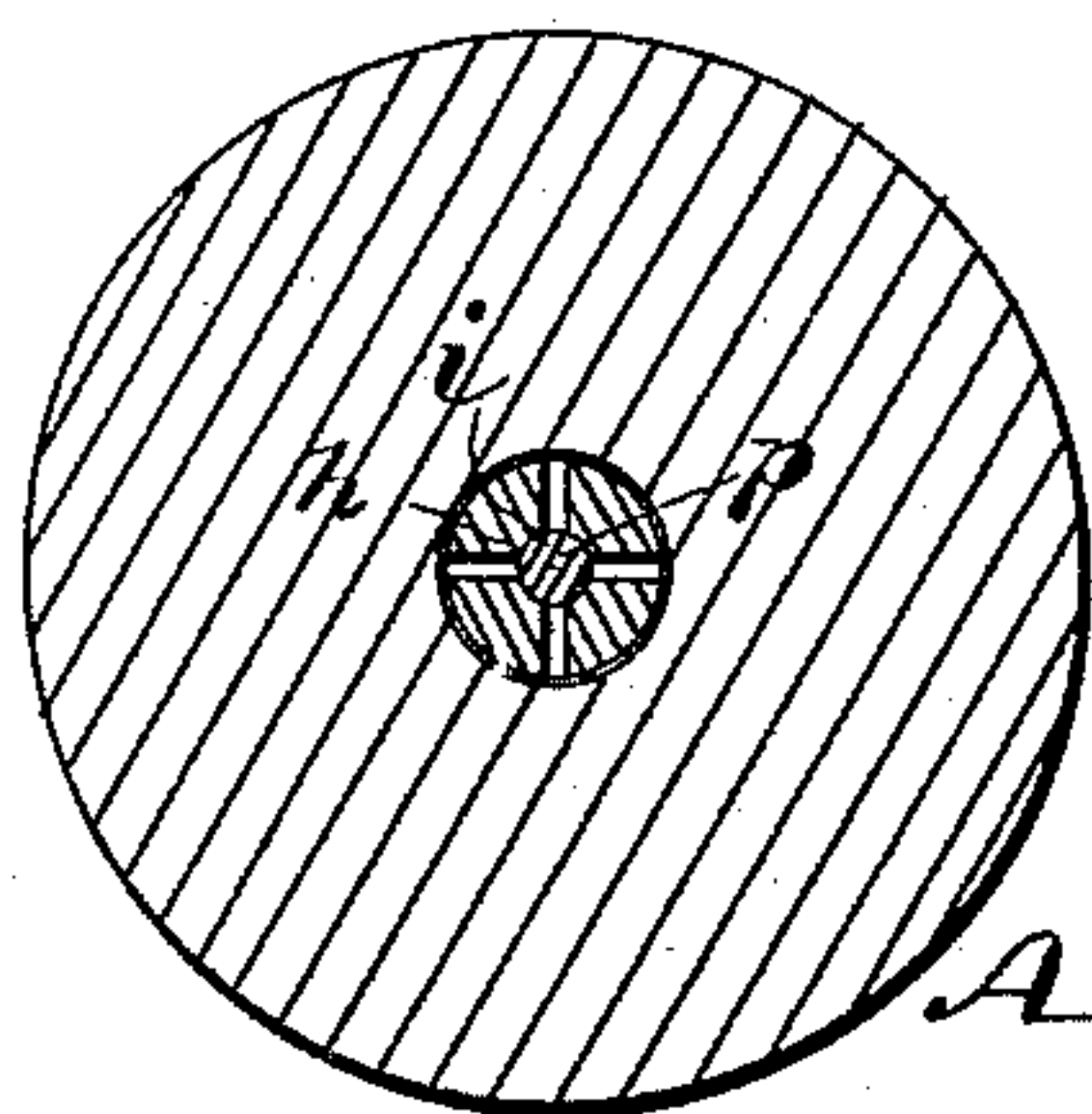
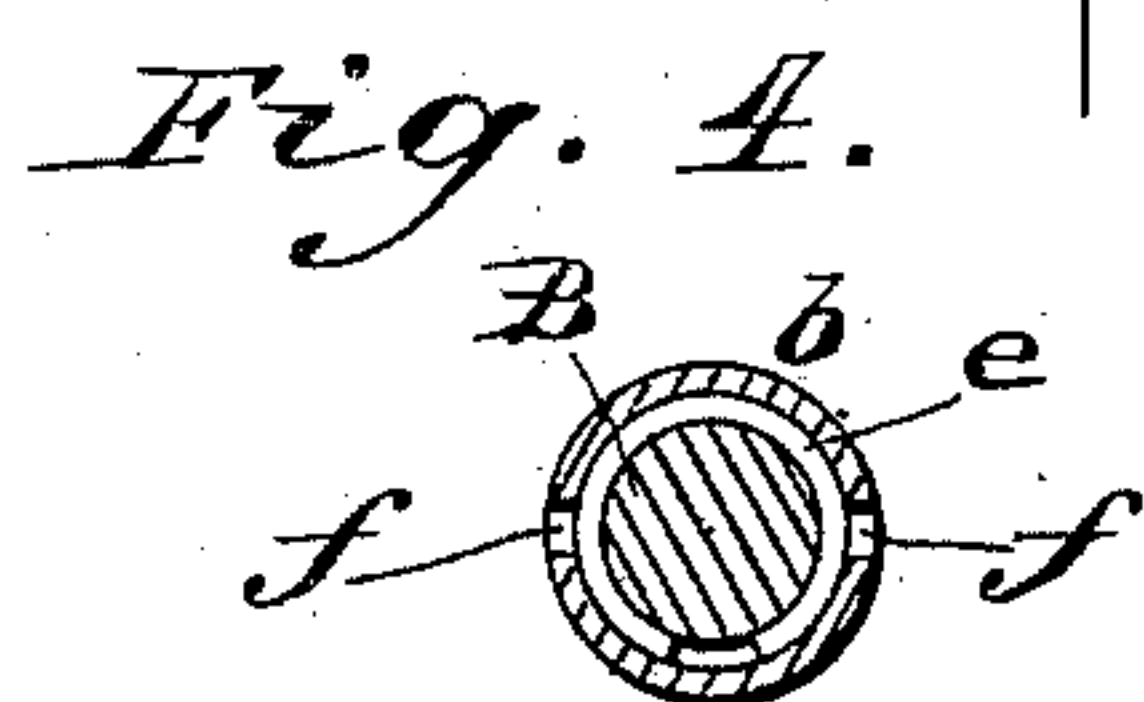
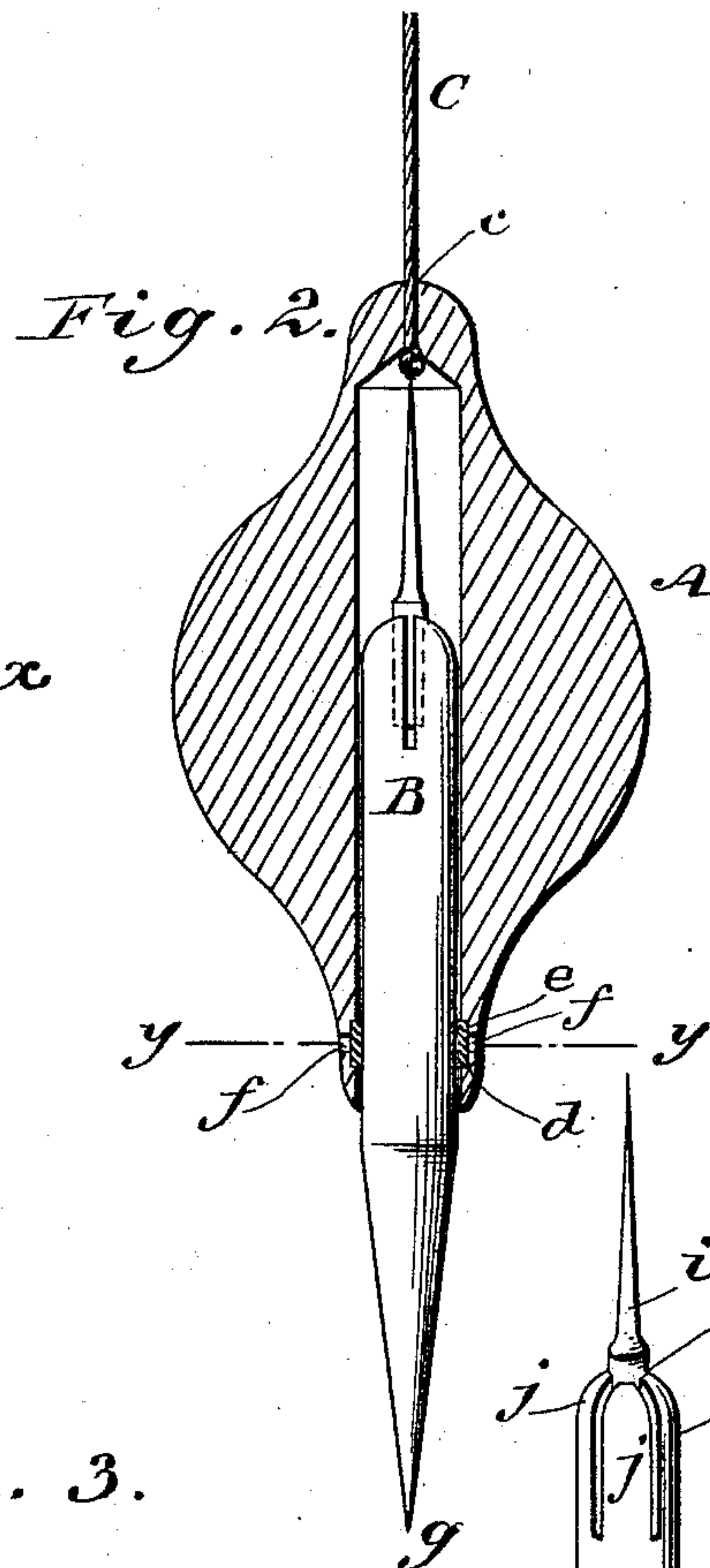
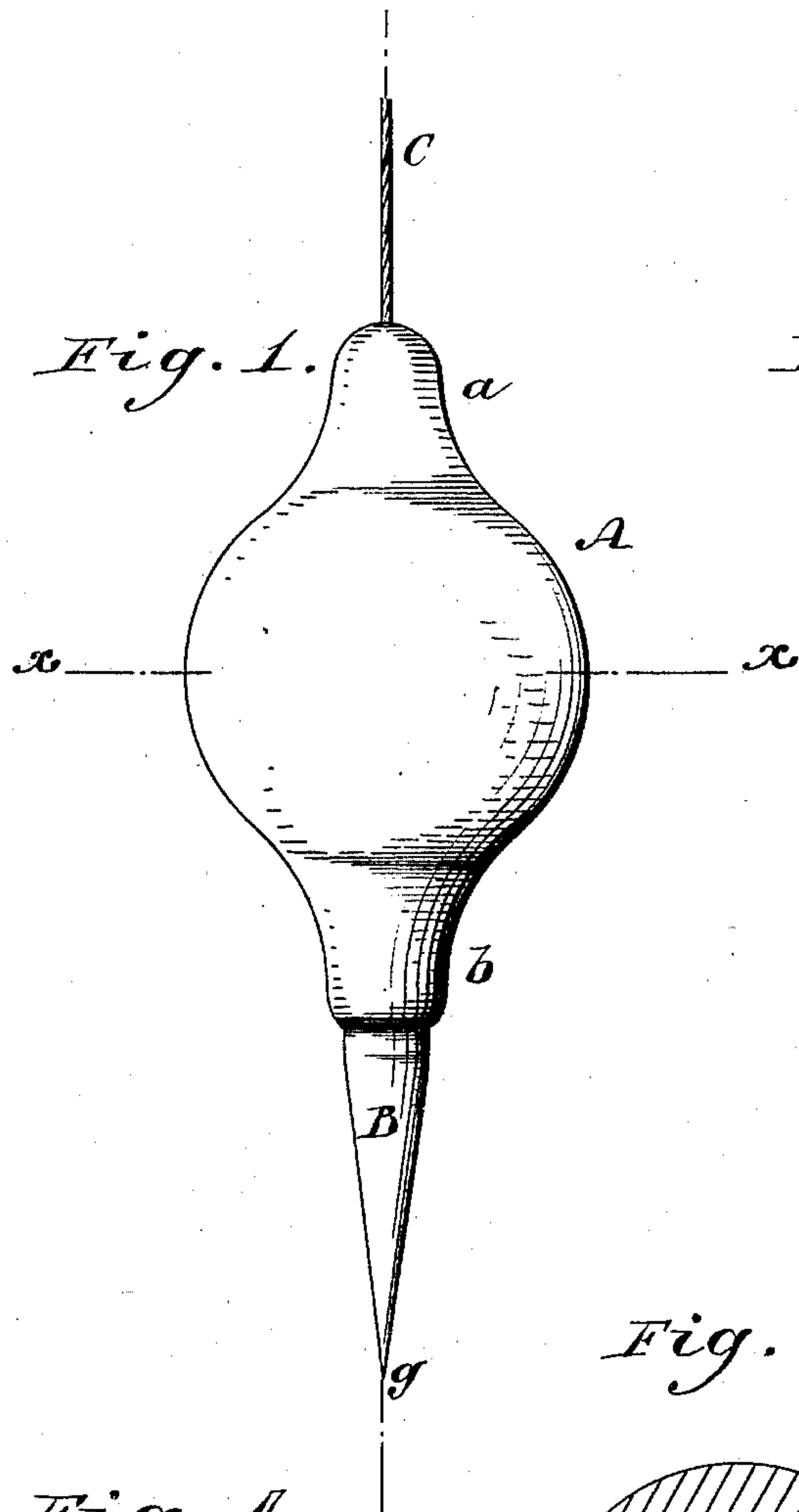


(No Model.)

J. M. CAMERON.  
PLUMB BOB.

No. 409,917.

Patented Aug. 27, 1889.



WITNESSES:  
*John H. Deemer*  
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INVENTOR:  
*J. M. Cameron*  
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ATTORNEYS.

# UNITED STATES PATENT OFFICE.

JOHN M. CAMERON, OF PHILADELPHIA, PENNSYLVANIA.

## PLUMB-BOB.

SPECIFICATION forming part of Letters Patent No. 409,917, dated August 27, 1889.

Application filed September 18, 1888. Serial No. 285,688. (No model.)

### *To all whom it may concern:*

Be it known that I, JOHN M. CAMERON, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and Improved Plumb-Bob, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a side elevation of my improved plumb-bob. Fig. 2 is a vertical diametrical section of the same. Fig. 3 is a transverse section taken on line *x x* of Fig. 1. Fig. 4 is a transverse section taken on line *y y* of Fig. 2, and Fig. 5 is a perspective view of the plumb-bob point.

Similar letters of reference indicate corresponding parts in all the views.

The object of my invention is to provide a plumb-bob in which the point is adjustable to adapt it to different kinds of work.

My invention consists in the combination, with an axially-bored plumb-bob, of a point inserted in the bore of the plumb-bob and adapted to be extended or withdrawn.

The invention also consists in the combination, with the adjustable point, of a clamp for holding a needle-point and a needle fitted thereto, all as hereinafter more fully described.

The body A of the plumb-bob is of spherical form, with extensions *a b* upon the upper and lower sides thereof. The body A is bored from the lower end to a point near the upper end to receive the movable point B, and a hole *c* extends through the top of the bob into the central bore to receive the plumb-line. Around the lower part of the bore of the body A is formed an annular chamber *d*, in which is inserted a split spring-ring *e*, whose internal diameter is made a little less than the diameter of the point B, to adapt it to bind the said point and hold it in any desired position.

In diametrically-opposite sides of the extension *b* of the plumb-bob body A are formed apertures *f*, to admit of inserting a wire for pressing the spring-ring *e* when it is desired to remove it from the chamber *d*.

The point B is provided at one end with the conical-pointed part *g*, and at the opposite end

with a cylindrical central opening *h*, for receiving the shank *p* of the movable point *i*. The bored end of the point B is slotted in two directions, forming spring-arms *j*, for clamping the shank of the point *i*, the said point *i* being made a little larger in diameter than the bore of the point B. The point *i* is finer than the point *g*, and is used for very accurate work. By this construction finer or coarser points may be used, as will be required for more or less accurate work. Should the point *i* become broken the remaining portion can be readily removed from the spring-arms *j* and a new one inserted. When not desired for use, it is inserted in the bore of the body A.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a plumb-bob, the axially-bored body A, provided with the annular chamber *d*, and a split spring-ring *e*, held within the chamber, said chamber *d* having lateral apertures *f*, whereby a suitable tool may be inserted to remove the split spring-ring, substantially as specified.

2. In a plumb-bob, the combination of an axially-bored body A, carrying the cord C, and provided with the annular chamber *d*, the split spring-ring *e*, held in said chamber, and the point B, fitted to the bore of the body A and adapted to be adjustably clamped by the split spring-ring, substantially as shown and described.

3. As an improved article of manufacture, a plumb-bob consisting of an axially-bored body provided with a clamping-ring in the lower end of the bore, and a reversible point having a conical-pointed part at one end and a removable point at the other, as set forth.

4. The combination of the axially-bored plumb-bob body A, the point B, provided with the spring-arms *j*, the auxiliary point *i*, provided with the shank *p*, and the spring-ring *e*, adapted to clamp the point B in the body A, substantially as specified.

JOHN M. CAMERON.

Witnesses:

ARCHD. MCPHERSON,  
JNO. STEUERLEIN.